Final

LANGLEY AIR FORCE BASE MARINA REPAIR ENVIRONMENTAL ASSESSMENT

United States Air Force
Air Combat Command
1st Fighter Wing

Prepared for:
Langley AFB
Hampton, Virginia

August 2004

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ACRONYMS AND ABBREVIATIONS

1 FW	1st Fighter Wing
ACM	Asbestos-Containing Materials
AFB	Air Force Base
Air Force	United States Air Force
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
CY	Cubic Yard
CZMA	Coastal Zone Management Act
dB	Decibel
DoD	Department of Defense
DEQ	Department of Environmental Quality
DHR	Department of Historic Resources
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ft	Foot/feet
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
H_2S	Hydrogen Sulfur
HAZMAT	Hazardous Materials
HQ ACC	Headquarters Air Combat Command
HTA	Heavier-than-Air
HWMP	Hazardous Waste Management Plan
HWSA	Hazardous Waste Storage Area
IDA	Intensely Developed Area
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
LBP	Lead-Based Paint
LUCIP	Land Use Control Implementation Plan
mlw	Mean Low Water
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration Langley Research Center
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
0_3	Ozone
ORC	Oxygen Release Compound
OSHA	Occupational Health and Safety Act
PAH	Polycyclic Aromatic Hydrocarbon
Pb	Lead
PCB	Polychlorinated Biphenyls
PCT	Polychlorinated Triphenyls
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RPA	Resource Protection Area
SAV	Submerged Aquatic Vegetation
SEL	Sound Exposure Level
sf	Square Feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TSCA	Toxic Substance Control Act
UFC	Uniform Facilities Criteria
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VCP	Virginia Coastal Resources Management Program
VCRMP	Virginia Coastal Resources Management Program
VMRC	Virginia Marine Resources Commission
VDCR	Virginia Department of Conservation Resources
VDEQ	Virginia Department of Environmental Quality
VPDES	Virginia Pollutant Discharge Elimination System

FINAL
FINDING OF NO SIGNIFICANT IMPACT/
FINDING OF NO PRACTICABLE ALTERNATIVE

1.0 NAME OF THE PROPOSED ACTION

Langley Air Force Base (AFB) Proposed Repair of the Marina Facility.

2.0 INTRODUCTION

The National Environment Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508) and Air Force Instruction (AFI) 32-7061 direct Langley AFB to consider the environmental consequences of implementing a major action as described by the attached Environmental Assessment (EA). The EA was completed a result of damage by a September 2003 hurricane (Isabel) and need for remedial action. The EA identified two alternatives, the preferred alternative or "Proposed Repair of the Marina Facility" and associated facilities and a No-Action Alternative. No other alternatives were considered.

3.0 DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Under the proposed action, Langley AFB would undertake five elements (Figure 2-2) of marina facility repair and reconstruction:

a) **Marina Building:** relocate on the existing paved site and construct a new marina building with food services (kitchen and dining area), a classroom, and administrative office. Existing marina building 615 would be demolished and an asphalt parking lot, capable of accommodating 36 cars, would be constructed. The existing above-ground fuel tank and fuel pump would also be relocated.

b) **Dry Slips:** The existing 100 dry slips would be consolidated and relocated immediately east of the marina building and accommodate 81 vessels. The abandoned boat ramp—in the existing dry slip area—would be demolished, brought up to grade, and a portion would be used as part of the dry slip area. The shoreline at the abandoned ramp would be stabilized with rip rap (large rocks with underlying fiber to minimize shore erosion).

c) **Fence:** A new steel picket fence would be constructed and enclose the marina building and dry slip area. Currently, the marina building and dry slips are not enclosed or secured and the dry slips share parking with Langley AFB personnel.

d) **Bulkhead Repair:** The existing bulkhead and sidewalk adjacent to the wet slips would be reconstructed. As part of the bulkhead reconstruction, the existing boat ramp would be revised; the fuel-pump station moved; the sewage pump-out station repaired with new pipes installed, and a new boat and fish rinse station built. Repair to the spit (to the south), would include removing the paved area and converting it into a walking path with a grass park.

e) **Wet Slips:** The existing 75 permanent timber, finger piers would be replaced with a new floating timber pier to accommodate 78 vessels. The existing two access roads would be closed and a single entry onto the marina facility would be constructed. The current picnic area, just west of the marina, would be demolished and the new marina entrance constructed. Maintenance dredging would occur within the wet slip area to remove silt accumulated during the hurricane.

Under the no-action alternative, the Air Force would not repair or reconstruct the marina facility at Langley AFB at this time. The Air Force would continue to provide food service and limited dry slip accommodations. No revenues would be gained from wet slip lease or rental and the dry slip area would continue to share quarters with personal vehicle parking.

4.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This Environmental Assessment (EA) provides an analysis of the potential environmental consequences resulting from implementation of the proposed action and alternatives. Ten resource categories were thoroughly analyzed to identify potential impacts: According to the analysis in this EA, implementation of the proposed action or alternative would not result in significant impacts in any resource category. Implementing the proposed action would not significantly affect existing conditions at Langley AFB. The following summarizes and highlights the results of the analysis by resource category.

Air Quality. There would be no long-term effects to the regional air quality under the proposed action. Emissions during the demolition and construction period would increase; however, they would be well below the regional thresholds, and therefore, regionally insignificant (see Appendix B). The marina operations following construction would be essentially the same as conditions found prior to September 2003 and similar to existing, baseline conditions.

Water Resources and Water Quality. The proposed action, repair and reconstruction of the marina facility, would have negligible effects on the water resources and water quality of the Back River. Boating would likely increase to levels found prior to September 2003 but use of best management practices including absorbent and containment booms (already in use), would minimize spills or discharges. However, siltation that normally results from boat propellers operating in shallow depths (as is the case now) would be reduced as a result of maintenance dredging. This would result in less turbidity and overall in slightly better water quality in the marina waters. Replacement of rip rap would also contribute to decreasing sources of turbidity.

Biological Resources. Under the proposed action, demolition and construction activities would take place on previously disturbed, developed (i.e., planted grass), or paved areas with little or no habitat to support plant and/or animal species of concern. Therefore, the potential to affect plant or animal species of concern would be minimal. Because the bottom area within the marina basin exhibits a low level of

biodiversity, dredging would also not present any long-term adverse effects to the organisms found in this habitat. Shellfish growing on existing rip rap, docks, pilings, and bulkheads would be affected by the demolition and/or repair of these structures; however, the population density of these organisms is low so effects would be minor and short term. In addition, implementation of the proposed action would not result in adverse effects to threatened or endangered species because there are no such species found in the marina facility area. If the no-action alternative were implemented, vegetation and wildlife would not be affected because no demolition or construction activities would occur.

Noise. Under the proposed action noise would be generated from demolition, construction, dredging, and transportation equipment and activities. The noise would be short term and intermittent in nature and should have minimal effect to the adjacent facilities. The nearest residential community is about a half mile to the east, across the Back River. This community should not experience any adverse effects during demolition and construction activities. Under the no-action alternative, the existing noise environment would remain unchanged. Aircraft would continue to generate average noise levels of 70 decibels (dB) to 75 dB at the marina facility.

Hazardous Materials and Waste. Under the proposed action, demolition of the existing marina building, peninsula, wet slips, and rip rap may result in materials considered hazardous waste. Any demolition debris deemed recyclable would be marketed; otherwise the debris would be disposed of in a local landfill permitted for this type of waste. Dredge material would be analyzed and depending on the chemical characteristics would be disposed in local, permitted, and approved sites that accept this type of debris. Under the no-action alternative, none of the marina facilities would be demolished resulting in no hazardous debris material being generated. Under both the proposed action and no-action alternative, no significant changes to hazardous materials and waste handling, collection, or transport would occur.

Coastal Zone, Floodplains, and Wetlands. The proposed action would have minimal effects on the coastal zone, wetlands, or floodplains. No coastal zones would be removed or disturbed, and there would be a net reduction of impervious surface area under the proposed action. Design of all facilities and structures and associated construction activities would be in accordance with Virginia's requirements so there should be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare. No wetlands would be directly impacted by upland land disturbing activities, and erosion and sedimentation would be controlled. In-water demolition and construction of the wet slips and repairs to the bulkhead and boat ramp would not affect any wetlands. While there is the potential that improper use of siltation screens during dredging operations may cause siltation of small clumps of wetland vegetation along the shoreline, it is not anticipated to cause any long-term significant impacts. Under the no-action alternative, no demolition, repair, or reconstruction would occur. Existing conditions would be maintained, the effect on the natural and beneficial values of the floodplain would remain the same; however, the rip rap and bulkheads would continue to deteriorate, and their ability to protect the coastal zone would decrease.

Erosion and Soils. There would be no adverse effects on soils during demolition, construction, dredging, or marina operations under the proposed action. Upland construction activities would disturb approximately 1 acre of land, be short term in nature, and erosion and sedimentation controls would be used. Some potential for transport of sediment exists during movement of bottom material and dredging activities. Proper use of siltation screens and other in-water barriers would reduce sedimentation or shoreline erosion. Dredge materials would be characterized, required permits obtained, and materials disposed of in an appropriate manner and location. There would be no adverse effects on soils under the no-action alternative because no demolition, repair, or reconstruction activities would occur; however, existing siltation of the marina basin would continue. The areas proposed for rip rap repair would not be repaired and erosion would continue to undermine the marina and reduce the shoreline.

***Socioeconomics*.** Repair and reconstruction activities would result in minor, short-term positive input into the local Hampton economy. Continued operation of the food service at the marina building and administration of marina facility activities (leasing, rental, fuel service) of the repaired and reconstructed marina would draw the same manpower positions but return revenues to the level experienced prior to the September 2003 hurricane. No significant impacts are anticipated if the proposed action were implemented. Under the no-action alternative, socioeconomic inputs would remain essentially unchanged from existing conditions.

Visual Resources/Aesthetics. For the proposed action, impacts to visual resources from construction equipment and barge-mounted cranes would be short-lived in duration and present little adverse impacts. Once repair and reconstruction of the marina facilities and shoreline have been undertaken, the existing negative visual character of the deteriorated marina basin would no longer be apparent and visual and aesthetic resources in the marina facility environment would improve. Under the no-action alternative, visual resources would not change. Langley AFB would not repair the marina facility and the scenic perspective from on base or the Back River would remain visually unappealing. Damage from the hurricane would remain evident and the wet slip area would remain closed to Langley AFB and military personnel, their families, and guests.

Cultural Resources. Under the proposed action, the marina building would be demolished. Although the building is a contributing element to the Langley Field Historic District, demolition of the marina building would not have a significant affect to the district's overall historic context and would be offset by repair and renovation of adjacent buildings (617 and 607) to resemble their historic appearance. Langley AFB has begun Section 106 consultation with the Virginia Department of Historic Resources (DHR). No impacts to traditional resources would be expected because none have been identified at Langley AFB. Under the no-action alternative, the marina building would not be demolished. Negligible impacts to cultural resources as a result of ongoing activities at Langley AFB would be expected.

5.0 FINDINGS

On the basis of the findings of the Environmental Assessment conducted in accordance with the requirement of the National Environmental Policy Act, the Council on Environmental Quality regulations, and Air Force Instruction 32-7061 as promulgated in 32 Code of Federal Regulations Part 989, and after careful review of the potential impacts of the proposed action and no-action alternative, I find that there would be no significant impact on the quality of the human or natural environment from the implementation of the proposed action or no-action alternative described in the EA. Therefore, I find there is no requirement to develop an Environmental Impact Statement.

Pursuant to Executive Order 11988, *Floodplain Management*, the authority delegated in Secretary of the Air Force Order 791.1, and the written redelegations accomplished pursuant to this order, and in taking the above information into account, I find there is no practicable alternative to implementing the proposed action in minimizing potential harm to or within the floodplain. In accordance with Executive Order 11990, *Protection of Wetlands*, the authority delegated in the Secretary of the Air Force Order 791.1, and the written redelegations accomplished pursuant to the order, I find that the proposed action, since it is not located in a wetland, is a practicable alternative.

Bruce A Wright

BRUCE A. WRIGHT
Lieutenant General, USAF
Vice Commander

16 Aug 04

Date

Final

LANGLEY AIR FORCE BASE
MARINA REPAIR
ENVIRONMENTAL ASSESSMENT

United States Air Force
Air Combat Command
1st Fighter Wing

August 2004

EXECUTIVE SUMMARY

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This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from the United States Air Force (Air Force) proposal to repair, demolish, reconstruct, and continue to operate a marina at Langley AFB. The marina would be compatible with current land uses and in the same area as existing marina support activities. Currently, portions of the existing marina (wet slips, dry slips, and boat ramp) are unusable and have been since the hurricane of September 2003. Under the proposed action, existing marina building 615, the wet slips, boat ramp, and dry slips would be demolished or repaired and reconstructed. This EA has been prepared by Langley AFB in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508), and Air Force Instruction (AFI) 32-7061, as promulgated in Title 32 of the CFR Part 989.

PURPOSE AND NEED FOR THE ACTION

The current marina facility is no longer able to operate wet slips, provide boat ramp access, and fuel and sewage pump-out services; the area around the marina (piers and sidewalk) is damaged and presents safety issues to pedestrians; the dry slip area contains pot holes; and vehicle parking by Langley AFB personnel limits dry slip boat storage availability. Therefore, the purpose of the proposed action is to:

- repair and reconstruct support facilities that support a working marina (i.e., boat ramp, piers, fuel and sewage pump-out stations, and boat rinse);
- design and reconstruct a marina that will withstand periodic flooding;
- enhance the Chesapeake Bay Resource Protection Area;
- provide a safe marina environment for Langley AFB and military personnel as well as their families; and
- reintroduce revenue to Langley AFB from slip rental and lease.

The marina facility would be repaired and reconstructed to meet current Air Force design standards and achieve the goals listed above. The existing facility fails to provide: a safe environment for marina operations, adequate marina support services, and sufficient dry slip and parking areas. Therefore, Langley AFB needs to repair and reconstruct the existing marina facility.

PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Under the proposed action, Langley AFB would undertake five elements (Figure 2-2) of marina facility repair and reconstruction:

a) **Marina Building:** relocate on the existing paved site and construct a new marina building with food services (kitchen and dining area), a classroom, and administrative office. Existing marina building 615 would be demolished and an asphalt parking lot, capable of accommodating 36 cars,

would be constructed. The existing above-ground fuel tank and fuel pump would also be relocated.

b) **Dry Slips:** The existing 100 dry slips would be consolidated and relocated immediately east of the marina building and accommodate 81 vessels. The abandoned boat ramp—in the existing dry slip area—would be demolished, brought up to grade, and a portion would be used as part of the dry slip area. The shoreline at the abandoned ramp would be stabilized with rip rap (large rocks with underlying fiber to minimize shore erosion).

c) **Fence:** A new steel picket fence would be constructed and enclose the marina building and dry slip area. Currently, the marina building and dry slips are not enclosed or secured and the dry slips share parking with Langley AFB personnel.

d) **Bulkhead Repair:** The existing bulkhead and sidewalk adjacent to the wet slips would be reconstructed. As part of the bulkhead reconstruction, the existing boat ramp would be revised; the fuel-pump station moved; the sewage pump-out station repaired with new pipes installed, and a new boat and fish rinse station built. Repair to the spit (to the south), would include removing the paved area and converting it into a walking path with a grass park.

e) **Wet Slips:** The existing 75 permanent timber, finger piers would be replaced with a new floating timber pier to accommodate 78 vessels. The existing two access roads would be closed and a single entry onto the marina facility would be constructed. The current picnic area, just west of the marina, would be demolished and the new marina entrance constructed. Maintenance dredging would occur within the wet slip area to remove silt accumulated during the hurricane.

Under the no-action alternative, the Air Force would not repair or reconstruct the marina facility at Langley AFB at this time. The Air Force would continue to provide food service and limited dry slip accommodations. No revenues would be gained from wet slip lease or rental and the dry slip area would continue to share quarters with personal vehicle parking.

MITIGATION MEASURES

In accordance with 32 CFR 989.22, the Air Force must indicate if any mitigation measures would be needed to implement the proposed action or any alternative selected as the preferred alternative under this environmental assessment. For purposes of this EA, no mitigation measures would be needed to arrive at a finding of no significant impact if the proposed action were selected for implementation at Langley AFB.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action or alternatives would not result in significant impacts in any resource category. Implementing the proposed action would not

significantly affect existing conditions at Langley AFB. The following summarizes and highlights the results of the analysis by resource category.

Air Quality. There would be no long-term effects to the regional air quality under the proposed action. Emissions during the demolition and construction period would increase; however, they would be well below the regional thresholds, and therefore, regionally insignificant (see Appendix B). The marina operations following construction would be essentially the same as conditions found prior to September 2003 and similar to existing, baseline conditions.

Water Resources and Water Quality. The proposed action, repair and reconstruction of the marina facility, would have negligible effects on the water resources and water quality of the Back River. Boating would likely increase to levels found prior to September 2003 but use of best management practices including absorbent and containment booms (already in use), would minimize spills or discharges. However, siltation that normally results from boat propellers operating in shallow depths (as is the case now) would be reduced as a result of maintenance dredging. This would result in less turbidity and overall in slightly better water quality in the marina waters. Replacement of rip rap would also contribute to decreasing sources of turbidity.

Biological Resources. Under the proposed action, demolition and construction activities would take place on previously disturbed, developed (i.e., planted grass), or paved areas with little or no habitat to support plant and/or animal species of concern. Therefore, the potential to affect plant or animal species of concern would be minimal. Because the bottom area within the marina basin exhibits a low level of biodiversity, dredging would also not present any long-term adverse effects to the organisms found in this habitat. Shellfish growing on existing rip rap, docks, pilings, and bulkheads would be affected by the demolition and/or repair of these structures; however, the population density of these organisms is low so effects would be minor and short term. In addition, implementation of the proposed action would not result in adverse effects to threatened or endangered species because there are no such species found in the marina facility area. If the no-action alternative were implemented, vegetation and wildlife would not be affected because no demolition or construction activities would occur.

Noise. Under the proposed action noise would be generated from demolition, construction, dredging, and transportation equipment and activities. The noise would be short term and intermittent in nature and should have minimal effect to the adjacent facilities. The nearest residential community is about a half mile to the east, across the Back River. This community should not experience any adverse effects during demolition and construction activities. Under the no-action alternative, the existing noise environment would remain unchanged. Aircraft would continue to generate average noise levels of 70 decibels (dB) to 75 dB at the marina facility.

Hazardous Materials and Waste. Under the proposed action, demolition of the existing marina building, peninsula, wet slips, and rip rap may result in materials considered hazardous waste. Any demolition debris deemed recyclable would be marketed; otherwise the debris would be disposed of in a local landfill permitted for this type of waste. Dredge material would be analyzed and depending on the chemical characteristics would be disposed in local, permitted, and approved sites that accept this type of debris. Under the no-action alternative, none of the marina facilities would be demolished resulting in no hazardous debris material being generated. Under both the proposed action and no-action alternative, no significant changes to hazardous materials and waste handling, collection, or transport would occur.

Coastal Zone, Floodplains, and Wetlands. The proposed action would have minimal effects on the coastal zone, wetlands, or floodplains. No coastal zones would be removed or disturbed, and there would be a net reduction of impervious surface area under the proposed action. Design of all facilities and structures and associated construction activities would be in accordance with Virginia's requirements so there should be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare. No wetlands would be directly impacted by upland land disturbing activities, and erosion and sedimentation would be controlled. In-water demolition and construction of the wet slips and repairs to the bulkhead and boat ramp would not affect any wetlands. While there is the potential that improper use of siltation screens during dredging operations may cause siltation of small clumps of wetland vegetation along the shoreline, it is not anticipated to cause any long-term significant impacts. Under the no-action alternative, no demolition, repair, or reconstruction would occur. Existing conditions would be maintained, the effect on the natural and beneficial values of the floodplain would remain the same; however, the rip rap and bulkheads would continue to deteriorate, and their ability to protect the coastal zone would decrease.

Erosion and Soils. There would be no adverse effects on soils during demolition, construction, dredging, or marina operations under the proposed action. Upland construction activities would disturb approximately 1 acre of land, be short term in nature, and erosion and sedimentation controls would be used. Some potential for transport of sediment exists during movement of bottom material and dredging activities. Proper use of siltation screens and other in-water barriers would reduce sedimentation or shoreline erosion. Dredge materials would be characterized, required permits obtained, and materials disposed of in an appropriate manner and location. There would be no adverse effects on soils under the no-action alternative because no demolition, repair, or reconstruction activities would occur; however, existing siltation of the marina basin would continue. The areas proposed for rip rap repair would not be repaired and erosion would continue to undermine the marina and reduce the shoreline.

***Socioeconomics*.** Repair and reconstruction activities would result in minor, short-term positive input into the local Hampton economy. Continued operation of the food service at the marina building and administration of marina facility activities (leasing, rental, fuel service) of the repaired and reconstructed marina would draw the same manpower positions but return revenues to the level experienced prior to the

September 2003 hurricane. No significant impacts are anticipated if the proposed action were implemented. Under the no-action alternative, socioeconomic inputs would remain essentially unchanged from existing conditions.

Visual Resources/Aesthetics. For the proposed action, impacts to visual resources from construction equipment and barge-mounted cranes would be short-lived in duration and present little adverse impacts. Once repair and reconstruction of the marina facilities and shoreline have been undertaken, the existing negative visual character of the deteriorated marina basin would no longer be apparent and visual and aesthetic resources in the marina facility environment would improve. Under the no-action alternative, visual resources would not change. Langley AFB would not repair the marina facility and the scenic perspective from on base or the Back River would remain visually unappealing. Damage from the hurricane would remain evident and the wet slip area would remain closed to Langley AFB and military personnel, their families, and guests.

Cultural Resources. Under the proposed action, the marina building would be demolished. Although the building is a contributing element to the Langley Field Historic District, demolition of the marina building would not have a significant affect to the district's overall historic context and would be offset by repair and renovation of adjacent buildings (617 and 607) to resemble their historic appearance. Langley AFB has begun Section 106 consultation with the Virginia Department of Historic Resources (DHR). No impacts to traditional resources would be expected because none have been identified at Langley AFB. Under the no-action alternative, the marina building would not be demolished. Negligible impacts to cultural resources as a result of ongoing activities at Langley AFB would be expected.

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PURPOSE AND NEED FOR THE PROPOSED ACTION

CHAPTER 1
PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force) proposes to repair and reconstruct the Langley Marina Facility (marina facility), which includes a marina building, wet slips, dry slips, and parking area at Langley Air Force Base (AFB) in Virginia. The marina is used by Air Force personnel, their families, and retired military. The marina facility would be repaired and reconstructed to meet current Air Force design standards and federal, state, and local regulations and codes.

According to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 [code of federal regulations] CRF 1500-1508) and Air Force Instruction (AFI) 32-7061 (as promulgated in 32 CFR 98), this environmental assessment (EA) analyzes the potential environmental consequences of implementing the proposed action and no-action alternative. The proposed action would involve five elements: 1) demolition of the existing marina building and construction of a new marina building, vehicle parking lot construction, and fuel tank relocation; 2) dry slip repair and construction; 3) fence construction to enclose the dry slips and marina building; 4) bulkhead repair; and 5) wet slip demolition and reconstruction (including boat ramp reconstruction, fish and boat rinse stations, and fuel and sewage pump-out service sites).

In addition to the proposed action, the Air Force analyzes the no-action alternative. Under the no-action alternative, the Air Force would continue operating the marina building with food services, the wet slips would remain closed, and the dry slip area would be unsecured and continue to share parking with personal vehicles. No other alternatives were considered.

1.2 BACKGROUND

Langley AFB is located in Hampton, Virginia, in the Tidewater Virginia area (Figure 1-1). It is the oldest continuously active air installation in the Air Force and is the Headquarters of Air Combat Command (HQ ACC). The base host unit is the 1st Fighter Wing (1 FW) with three F-15 fighter squadrons and 75,000 active duty, civilian and retired personnel. The main base is occupied jointly with the National Aeronautics and Space Administration Langley Research Center (NASA) on 2,883 acres (Langley 2003a). The Back River, a tidal estuary that flows east and discharges into the lower reaches of the Chesapeake Bay, surrounds the base on three sides (north, south, and east). Langley AFB and NASA occupy a relatively flat area (elevation ranges from 5 to 11 feet) on land that separates the Back River main channel into the Northwest and Southwest Branches (Figure 1-2). Langley AFB and NASA also lie within the Chesapeake Bay watershed and are part of the Resource Protection Area identified in the Chesapeake Bay Preservation Act (refer to Figure 1-1).

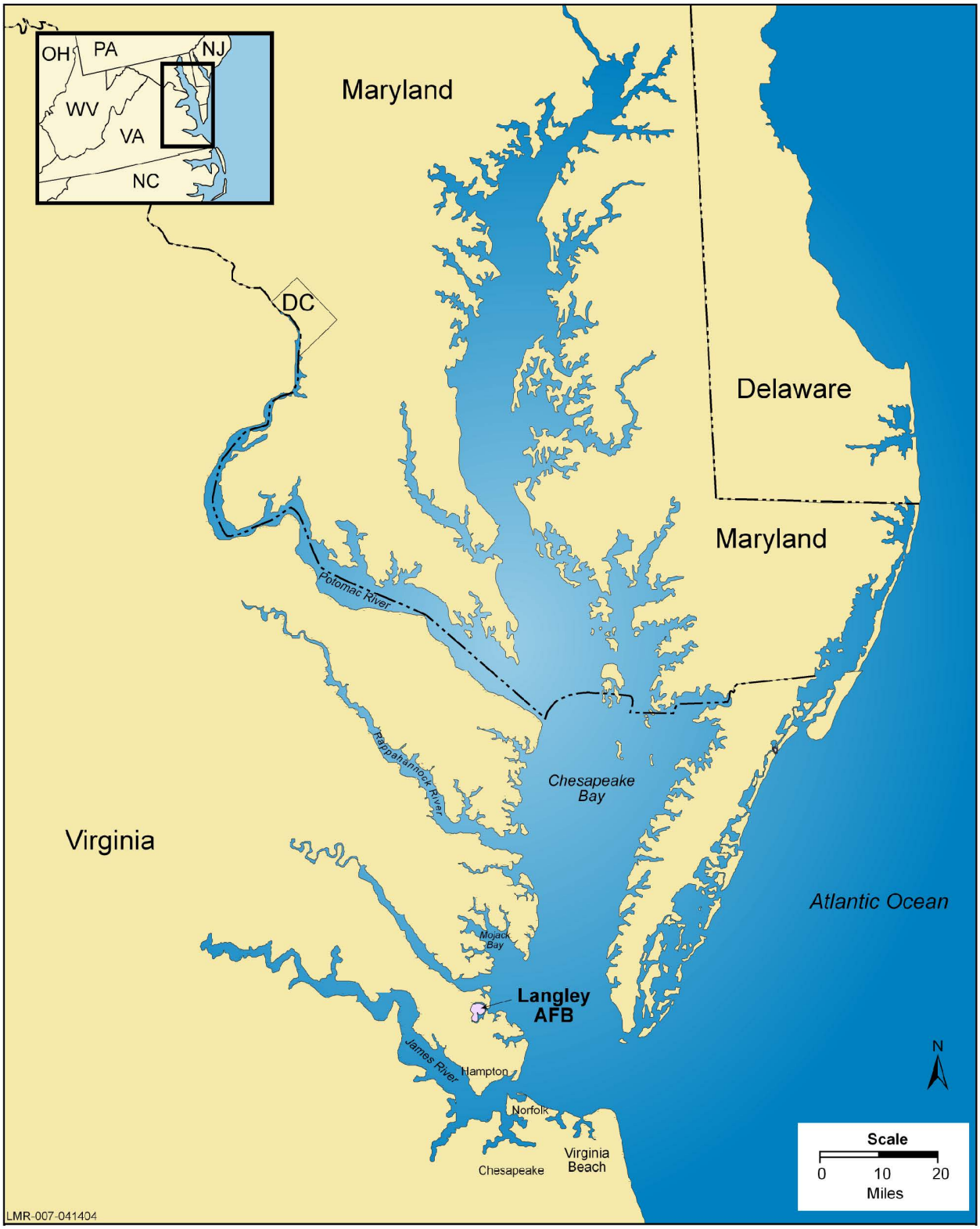

Figure 1-1 Chesapeake Bay Regional Area

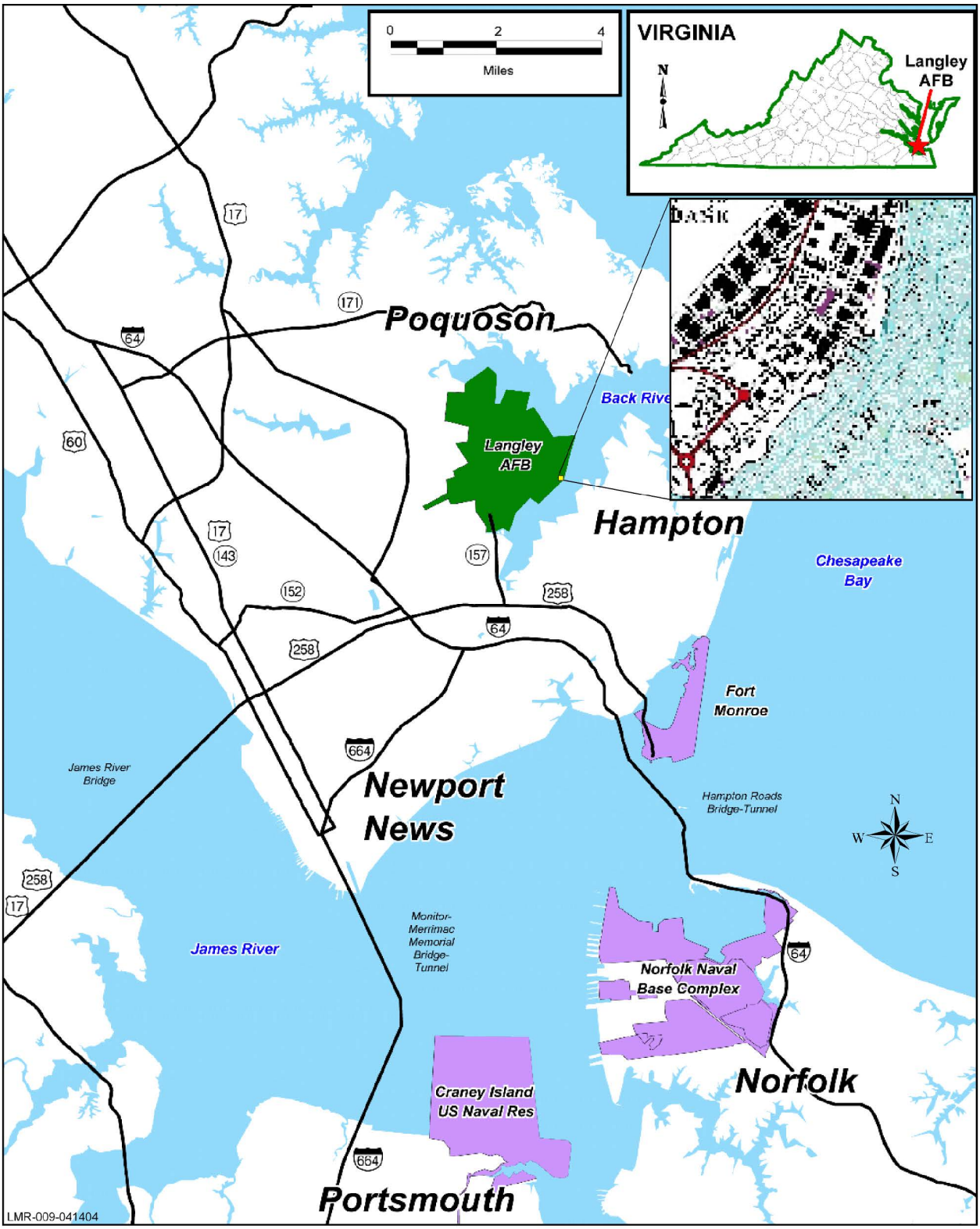

Figure 1-2 Regional Location Map

Langley AFB is one of fifty-four federal facilities located within the Chesapeake Bay Watershed. Due to the number of federal facilities in the area, the United States Environmental Protection Agency's (USEPA) Chesapeake Bay Program established a Federal Agencies Committee in 1984. Langley AFB has been an active participant in the Program since 1994, when the first Federal Agencies' Agreement committed federal lands to long-term, specific water quality goals and required cooperative efforts to improve the ecosystem management of the Chesapeake Bay. In 1998, the federal agencies, including the Department of Defense (DoD) and the Air Force, renewed their commitments to the Chesapeake Bay Program by signing the Federal Agencies' Chesapeake Ecosystem Unified Plan. Although no statutory mandates drive enforcement of the Plan, as an active participant in the Chesapeake Bay Program, Langley AFB is committed to the restoration and protection of the Back River's water quality, living resources, habitats, and ecological relationships.

The Langley marina wooden and concrete pier was constructed in 1932, steel and concrete bulkheads were added in 1961, and six finger piers constructed in 1966 (Langley 1968). The marina building (615) was erected in 1942, originally as a maintenance shop. In 2000, following several years of vacancy, building 615 was converted into the marina support building (formerly occupying building 607). Since the 1990s, operations at the marina facilities include (Figure 1-3):

- limited food service and a snack bar/retail counter during weekdays at the marina building;
- fuel and sewage pump-out stations and boat ramp access;
- boat rinsing; and
- slips available for lease and/or rent including permanent, fixed wet slips to accommodate up to 75 boats and dry slips up to 100 parked boats and trailers (Langley 1998a).


Existing wet slip finger piers

However, the September 2003 hurricane damaged the wet slips rendering them unsafe to use, filled the marina with silt, removed rip rap, and required closure of access to the slips. Not only were the wet slip piers closed, but the damage rendered the only boat ramp and fuel pump inaccessible as well. The sewage pump-out station had already ceased to operate prior to the hurricane due to broken sewage lines and this service discontinued. Although dry slips remain available for rent and/or lease, damage to the asphalt parking area by flooding limited its use. In addition, the dry slip area is not enclosed, nor secured, so the area is crowded with Langley AFB personnel using the dry slip as a parking lot. With these closures, the revenue previously received from leasing, renting, and fuel dispensing has been lost.

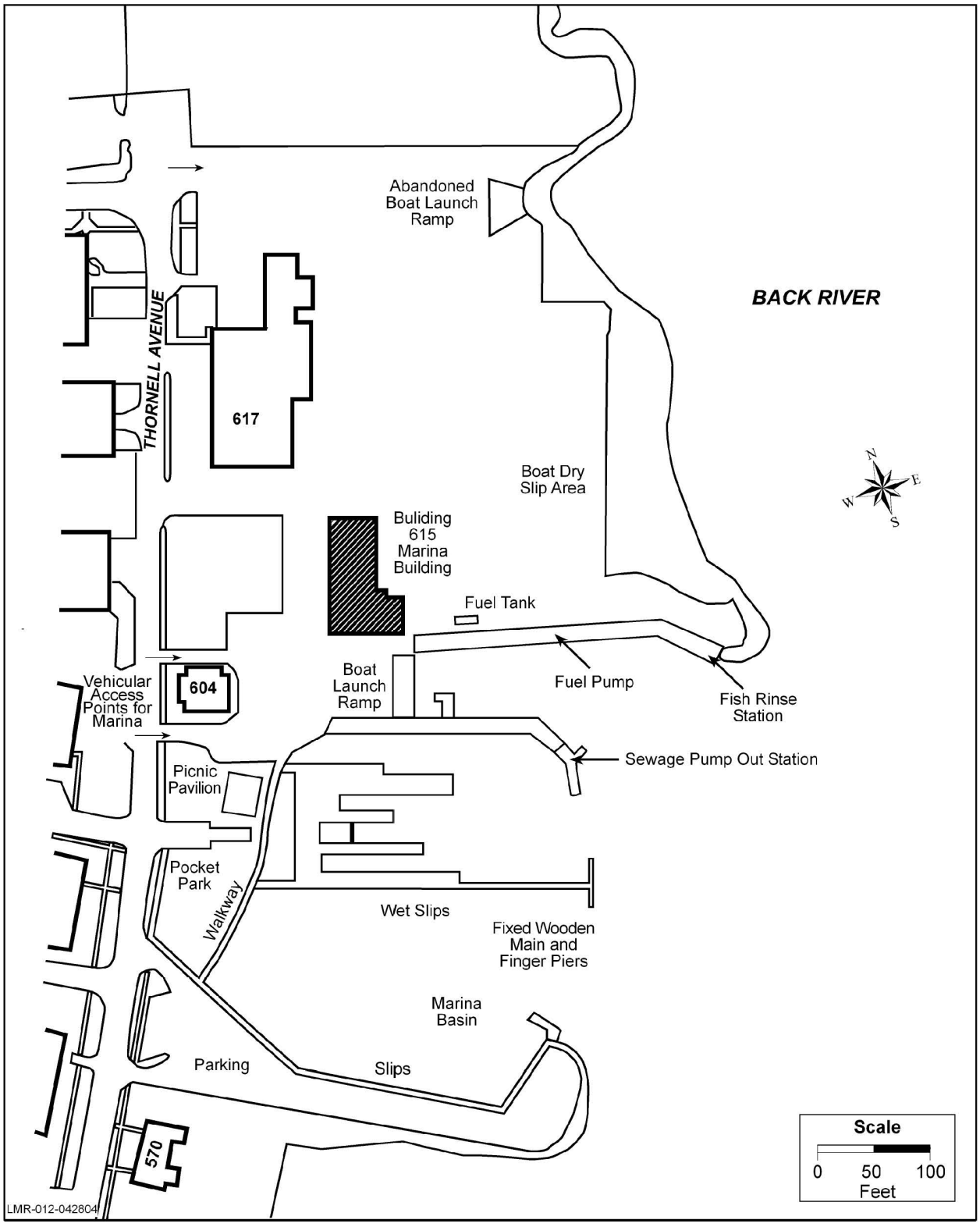

Figure 1-3 Existing Marina Facility

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The current marina facility is no longer able to operate wet slips, provide boat ramp access, and fuel and sewage pump-out services; the area around the marina (piers and sidewalk) is damaged and present safety issues to pedestrians; the dry slip area contains pot holes and vehicle parking by Langley AFB personnel limits dry slip boat storage availability. Therefore, the purpose of the proposed action is to:

- repair and reconstruct support facilities that support a working marina (i.e., boat ramp, piers, fuel and sewage pump-out stations, and boat rinse);
- design and reconstruct a marina that will withstand periodic flooding;
- enhance the Chesapeake Bay Resource Protection Area;
- provide a safe marina environment for Langley AFB and military personnel as well as their families; and
- reintroduce revenue to Langley AFB from slip rental and lease.

The marina facility would be repaired and reconstructed to meet current Air Force design standards and achieve the goals listed above. The existing facility fails to provide: a safe environment for marina operations, adequate marina support services, and sufficient dry slip and parking areas. Therefore, Langley AFB needs to repair and reconstruct the existing marina facility.

CHAPTER 2

DESCRIPTION OF PROPOSED ACTION AND NO-ACTION ALTERNATIVE

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DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

This chapter describes the Langley AFB proposal to repair and reconstruct the Langley Marina Facility, which includes a marina building, wet slips, dry slips, boat ramp, and parking area at Langley AFB. The preferred alternative, or proposed action analyzed in this EA involves repairing and reconstructing the marina facility in the eastern portion of the base along the Back River (refer to Figure 1-2). The existing marina building would be demolished following the new marina building construction. The Air Force also analyzes the no-action alternative that would continue use of the existing marina facility and its assets. No other alternatives were considered.

2.1 DESIGN CRITERIA AND REQUIREMENTS FOR THE PROPOSED ACTION

Given that the existing marina facility needs repair and reconstruction, consideration of alternative locations on base or comprehensive modification to the facility would not meet the purpose and need. As such, Langley AFB considered only the proposed action and no-action alternative. To both meet the purpose and need while preventing or minimizing environmental impacts, Langley AFB applied the following criteria in the design of the proposed action.

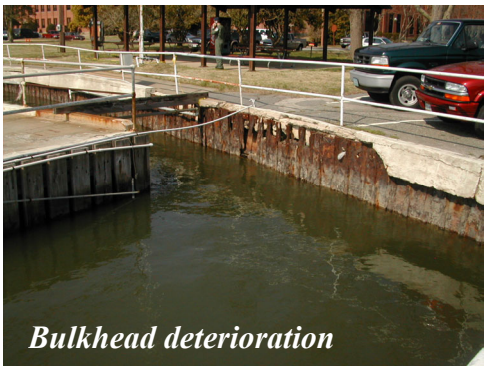
1. Emphasize repair – to restore full use of the marina to provide wet slip, dry slip, and boat ramp facilities for Langley AFB and military personnel and their families, Langley AFB proposed to use the existing site and improve it.
2. Ensure land use compatibility – in the design of the marina facility, compatibility with the Langley Field Historic District context as well as other land use patterns.
3. Minimize environmental impact – Langley AFB will employ construction methods that result in minimal effects to the environment such as limiting silt, sedimentation, and noise from construction; assuring continued access to oyster beds more than a mile away; providing for continued marina building food services; and reducing conflict with access to base transportation.
4. Maintain continued protection of the Chesapeake Bay watershed – the design of the marina facility and construction methods will reduce erosion, turbidity, and support shoreline stabilization, all factors consistent with the Chesapeake Bay Conservation Act.

To meet the need for repairing the marina facility, Langley AFB developed the proposed action through application of the design requirements described above. In addition, it applied the set of overarching principles:

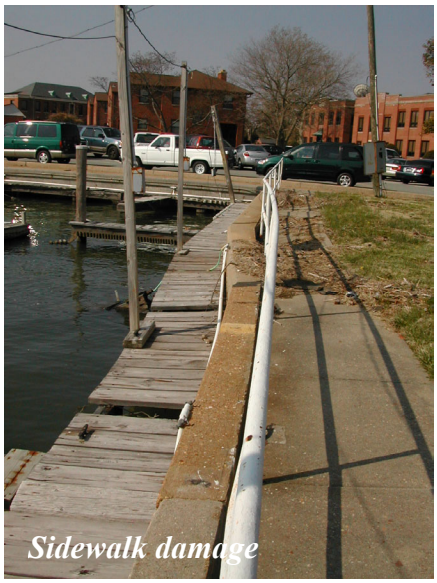
- Design Standards – the marina facility should reflect modern design standardization as well as meet all safety requirements;

- Durability and Maintainability – construct buildings, piers, ramps, and other support facilities to withstand period flooding with minimal damage; and
- Architectural Compatibility – the marina should reflect architecture, functional design, and quality that does not conflict with the historic nature of the landscape.

The existing marina facility does not currently meet the elements listed above. The facility is severely damaged:


Bulkhead deterioration

- timber piers are rotting or missing;
- walkways are uneven and pot holed;
- of the two boat ramps, one is not usable and the other is closed due to the wet slip deterioration and silt buildup;
- the bulkheads are deteriorating and shore stabilization is compromised;
- the marina building is sitting on a foundation that will not withstand periodic flooding; and
- dry slips are damaged with potholes and the area is shared with parked vehicles because it is not enclosed or secured.


Sidewalk damage

2.2 PROPOSED ACTION AND NO-ACTION ALTERNATIVE

The Air Force determined that repairing the existing marina would fulfill the purpose and need for the proposed action. Given that the existing marina facility needs repair and reconstruction, consideration of alternative locations on base or comprehensive modification to the facility would not meet the purpose and need. As such, Langley AFB considered only the proposed action.

Under the proposed action, Langley AFB would undertake five elements (Figure 2-1) of marina facility repair and reconstruction:

a) **Marina Building:** relocate on the existing paved site and construct a new marina building with food services (kitchen and dining area), a boat storage/classroom, and administrative office. Existing marina building 615 would be demolished and an asphalt parking lot, capable of accommodating 36 cars, would be constructed. The existing above-ground fuel tank and fuel pump would also be relocated.

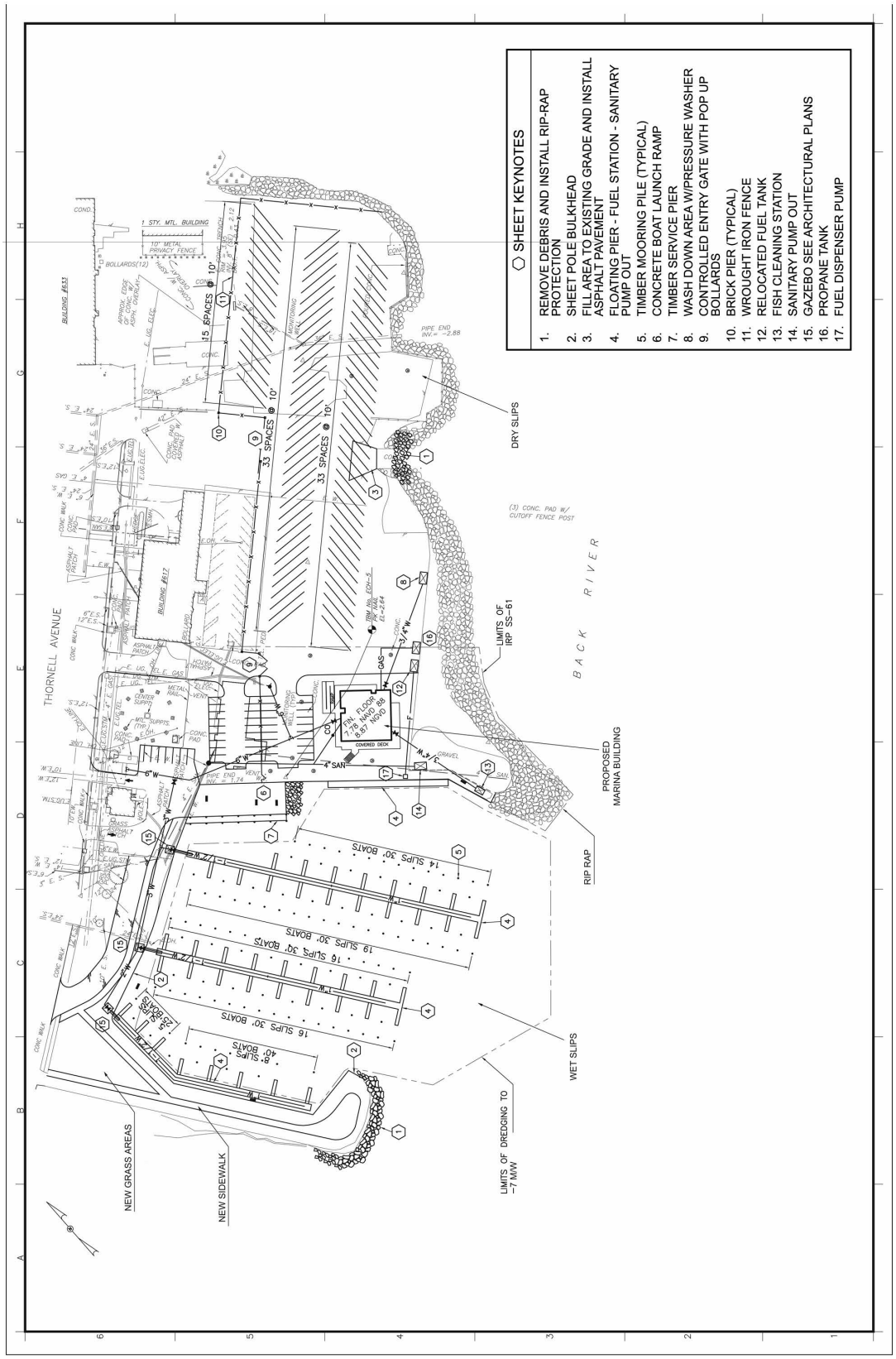


Figure 2-1 Proposed Marina Facility Site Plan

b) **Dry Slips:** The existing 100 dry slips would be consolidated and relocated immediately east of the marina building and accommodate 81 vessels. The abandoned boat ramp—in the existing dry slip area—would be demolished, brought up to grade, and a portion would be used as part of the dry slip area. The shoreline at the abandoned ramp would be stabilized with rip rap (large rocks with underlying fiber to minimize shore erosion).

c) **Fence:** A new steel picket fence would be constructed and enclose the marina building and dry slip area. Currently, the marina building and dry slips are not enclosed or secured and the dry slips share parking with Langley AFB personnel.

d) **Bulkhead Repair:** The existing bulkhead and sidewalk adjacent to the wet slips would be reconstructed. As part of the bulkhead reconstruction, the existing boat ramp would be revised; the fuel-pump station moved; the sewage pump-out station repaired with new pipes installed, and a new boat and fish rinse station built. Repair to the spit (to the south), would include removing the paved area and converting it into a walking path with a grass park.

e) **Wet Slips:** The existing 75 permanent timber, finger piers would be replaced with a new floating timber pier to accommodate 78 vessels. The existing two access roads would be closed and a single entry onto the marina facility would be constructed. The current picnic area, just west of the marina, would be demolished and the new marina entrance constructed. Maintenance dredging would occur within the wet slip area to remove silt accumulated during the hurricane.

2.2.1 Marina Facility Construction

The Air Force anticipates that construction of the marina facility would begin in the Fall of 2004. Two construction crews, dry and wet, would likely work simultaneously on the demolition and construction activities at the marina facility; one crew would work those elements related to the wet slip and bulkhead and another on those elements related to the marina building, fence, rip rap, and dry slips. Table 2-1 provides an illustrative construction progression of events. Total demolition and construction activities are anticipated to require one year to complete.

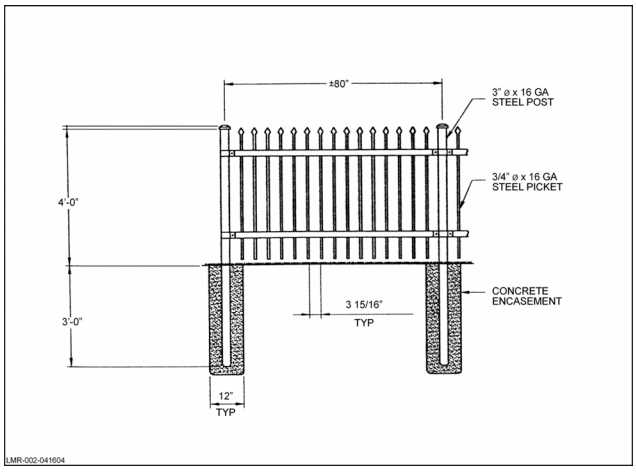
Table 2-1 Illustrative Demolition and Construction Events Progression

	Wet Crew	***Dry Crew***
Demolition	Marina Piers (wet slip)	Dry Slip
	Boat ramp	Abandoned Boat Ramp
		Peninsula
		Marina Building
Construction	Bulkhead repair	Marina Building
	Dredging	Rip Rap
	Floating and Anchor Piers (wet slip)	Dry Slip/fuel station/fish and boat rinse stations/sewage pump-out station
	Boat Ramp	Peninsula
	Mooring Piers	

The following provides construction details for each of the five elements:

- *Marina building*: The new marina building would be placed on an elevated foundation to minimize damage during periodic flooding. The building foundation would be constructed on top of the current paved area by using clean sand fill, then piles driven 15 ft off center for support, and a concrete floor slab placed on top of the fill and piles. The new marina building would be 3,844 square feet (sf) with a 2,556-sf deck surrounding it for a total of 6,400 sf (Figures 2-2 and 2-3). It would replace the existing 4,325-sf marina building that would be demolished and capped for parking spaces. Construction of the marina building and parking lot would not increase the amount of impermeable surfaces associated with this element. The building design will conform with all Air Force design and safety standards and includes features such as columns and brick to conform to the historic nature of the area. The existing fuel pump and above-ground storage tank would be relocated; the existing double-walled tank would be used and a new pump installed. The relocated tank would stand within a concrete secondary containment area built to hold the volume of the contents within the storage tank.

- *Dry slips*: a 75,000-sf asphalt-paved dry slip area would be created using the existing paved dry slip (about 60,000 sf) and expanding east by 15,000 sf to an abandoned lay-down area (currently the majority of this area is either asphalt or concrete pavement or gravel). This expansion would involve capping the existing area, soil would not be disturbed. The abandoned boat ramp (just east of the dry slips) would be filled and brought up to grade to support a portion of the dry slip area. The shoreline at the abandoned ramp would be stabilized with rip rap (large rocks with underlying fiber to minimize shore erosion) (refer to Figure 2-1) to a length of about 50 ft long, by 10 ft wide, and 5 ft deep.
- *Fence*: A new 4-ft tall, 970-ft long, steel picket fence would be constructed. The fence would enclose the new marina building and expanded dry slip area (refer to Figure 2-1). The 3-ft deep posts will be encased in concrete about a foot in diameter.



Proposed steel picket fence

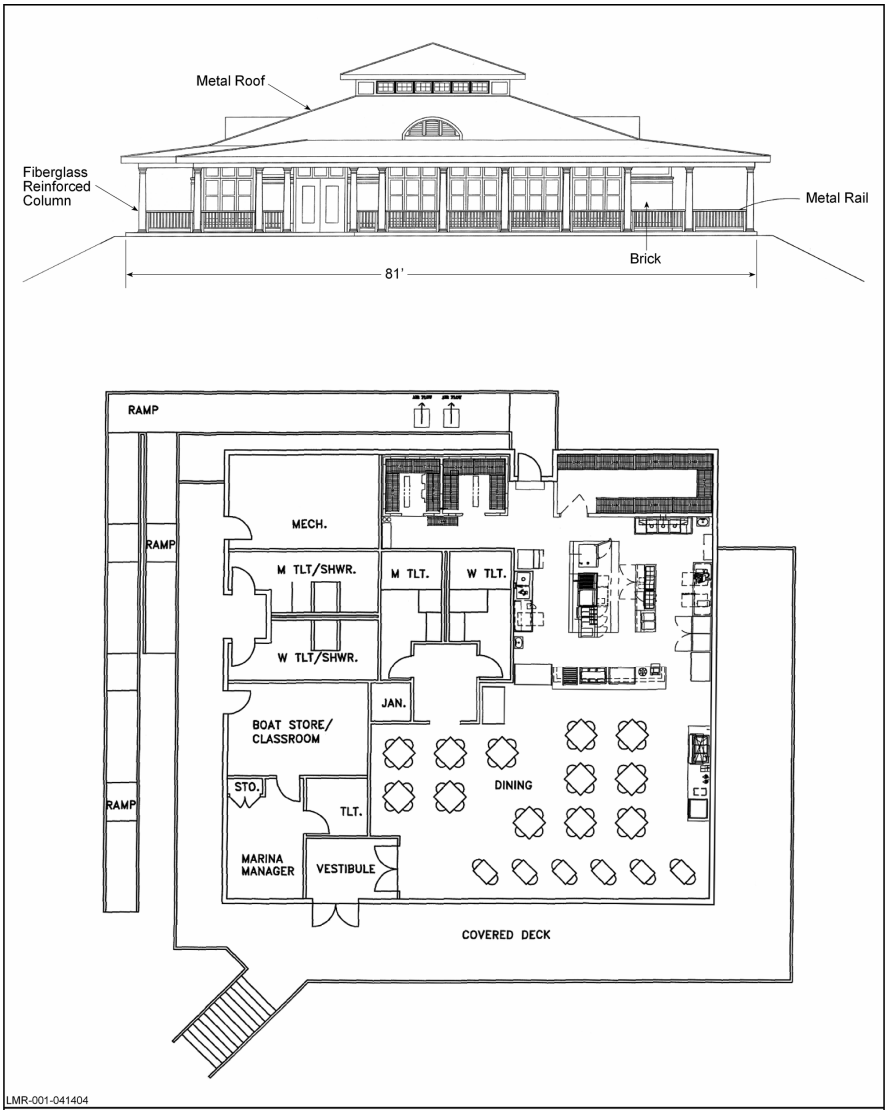


Figure 2-2 Marina Building Conceptual Design

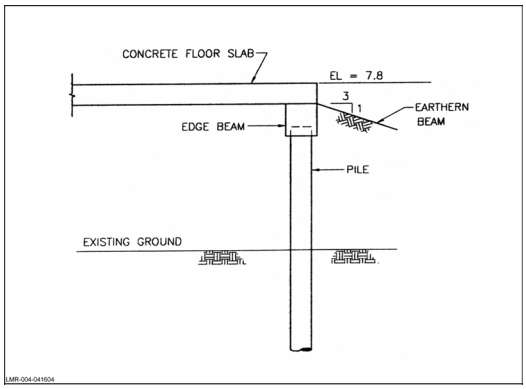
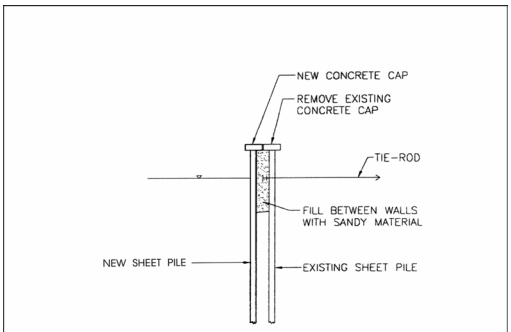
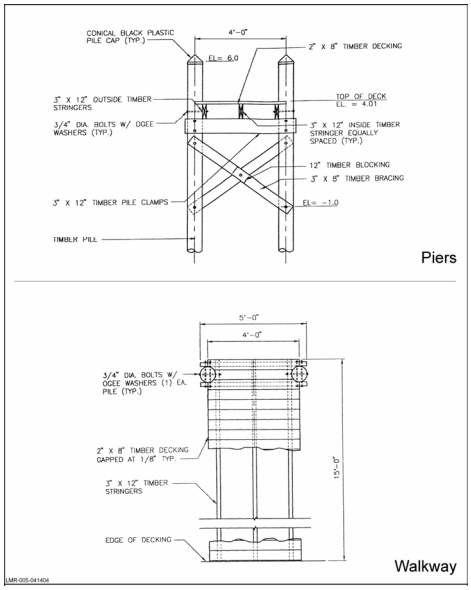


Figure 2-3 Proposed Marina Building Foundation Concept Design

- *Bulkhead*: The existing, deteriorated bulkhead would be reinforced with a new steel sheet pile bulkhead, approximately 990-ft long. The new sheet pile would be submerged about 5 ft into the soil along the marina wet slip area (refer to Figure 2-1) with a pile driver. Between the old and new sheet pile, clean sand would be placed as fill and the sandwiched piles capped with concrete; a metal tie rod would affix the bulkhead to the shoreline. The existing concrete boat ramp would be revised and a new concrete ramp would take its place. The new ramp would be thinner by about 10 ft at 16-ft wide. A new concrete secondary containment tank would be constructed to support the new fuel-pump station location; and a new above-ground, portable sewage pump-out station would be installed with associated new sewage pipes. These pipes will be placed along the bulkhead when in the marina but would be travel underground to meet the base sewage system. A new concrete sidewalk and grass area would be built on the existing 24,600-ft, paved peninsula (comprising the southern boundary of the marina) and rip rap installed (about 650 ft long, by 10 feet wide, and 5 feet deep) at the eastern tip to stabilize the shoreline (refer to Figure 2-1).



Proposed bulkhead reinforcement



Floating pier concept design

- *Wet slip*: The 75 permanent timber, finger piers would be removed, the marina dredged, and a new floating timber pier constructed to accommodate up to 78 vessels (refer to Figure 2-1). The new floating pier design moves up and down with the tide and should limit the amount of damage from flooding. Anchor piers will be pile driven into the marina and the manufactured floating piers lifted into place. Mooring timber piers would then be pile driven into area for boat tie ups. The existing two access roads would be closed and a single entry into the marina facility would be constructed (about 4,800 sf) in the picnic area, just west of the marina.

As part of the marina reconstruction, maintenance dredging would occur. Approximately 24,940 cubic yards (CY) of dredge materials would be removed to bring the shallow bottom to 7 ft below mean low water (mlw). Removal methods would be either hydraulic or clam shell. Under the hydraulic method, dredge materials are sucked into underwater piping and travel through a pipeline to an appropriate disposal site. The pipe will be both submerged and floating and will be placed in such a manner that does not

conflict with local boating traffic and local fishing industries. The other method of removal involves a barge-mounted bucket (i.e., clam shell) that extracts the materials from the floor bottom, places the material on a barge, goes through a dewatering process, and then is barged to the appropriate disposal site. Under either method, siltation screens and barriers would be erected to limit movement of materials into the Back River. Prior to dredging and disposal, marina bottom soils would be tested and depending on the chemical characteristics disposed of at an appropriate upland location that can receive such materials (e.g., permitted landfills, farmlands).

A fish rinse station would also be constructed and drain into the river; no detergents would be allowed. A new boat rinse station would provide water to rinse only the boat, no engine cleaning or detergent use would be permitted.

In addition to the elements described above, associated utilities such as electricity, plumbing, sewage, and drainage lines would need to be constructed under the marina building, parking area, and dry slips. Trenches would be about 2 ft deep by 1 ft wide.

In summary, under the proposed action to repair and reconstruct the marina facility the total impermeable surface area would decrease by about 36,600 sf: existing paved surfaces comprise approximately 191,600 sf and new paved surfaces would comprise approximately 155,000 sf. It is anticipated that total construction activities would take approximately 9 months.

2.2.2 Demolition Activities

Under the proposed action, several demolition projects would be undertaken:

- The existing marina building would be removed, along with the asphalt parking area, approximately 2 acres of paved areas would be removed and readied for construction.
- To accommodate the new dry slip area, approximately 60,000 sf (about an acre) of paved, concreted, or graveled areas would be removed and graded for construction. About 150 ft of chain link fence, between the existing dry slip and lay-down area, would be removed for dry slip expansion.
- To repair the wet slip area, the existing permanent timber and concrete pier would be removed by a crane-mounted barge. Dredging would use either hydraulic (i.e., dredge spoils are moved through tubes directly from the marina to a disposal site) or clamshell (spoils are dug up from the marina bed, placed on a barge, and shipped to the disposal site) methods of disposal. For either method of dredging, silt screen would be in place to limit the amount of materials going into the Back River and thus the Chesapeake Bay watershed. Approximately 24,600 sf of asphalt would be removed from the peninsula.
- To stabilize the shoreline on the peninsula, the existing rip rap debris would be removed.

It is anticipated that a total of 3 months would be needed to demolish existing structures and facilities.

2.2.3 Marina Facility Operations

During demolition and construction activities, it is anticipated that the marina building would stay open to provide food service for as long as possible, closing only when demolition of the building would occur. Following construction of the facility, the marina could once again receive revenues from providing: safe and secure wet slips, bulkheads, dry slips, a fish and boat rinse operation, and fuel and sewage pump-out stations.

2.3 NO-ACTION ALTERNATIVE

Under the no-action alternative, the Air Force would not repair or reconstruct the marina facility at Langley AFB at this time. The Air Force would continue to provide food service and limited dry slip accommodations. No revenues would be gained from wet slip lease or rental and the dry slip area would continue to share quarters with personal vehicle parking.

2.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA examines the affected environment for the Langley AFB marina facility, considers the potential effects of the proposed action, and compares those to current conditions under the no-action alternative. The steps involved in the environmental impact analysis process (EIAP) used to prepare this EA are outlined below.

1. *Conduct Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).* IICEP requires comments to be solicited from local governments as well as federal and state agencies to ensure their concerns and issues about the marina facility proposal are included in the analysis. It also requires that the public in the region local to the proposed action be solicited for their comments as well. In April 2004, Langley AFB sent IICEP letters to these agencies requesting their input on the proposal. Chapter 6 provides the list of people and agencies contacted and Appendix A copies of IICEP correspondence.

2. *Prepare a draft EA.* The first comprehensive document for public and agency review is the draft EA. This document examines the environmental impacts of the proposed action and no-action alternative.

3. *Announce that the draft EA has been prepared.* An advertisement is posted in a newspaper local to the proposed action, notifying the public as to the draft EA's availability for review in a local library. After the draft EA is distributed, a 30-day public comment period begins. A public notice of

document availability was published on 31 May 2004 and again on 11 June 2004. The notice appeared in the Daily Press newspaper.

4. *Provide a public comment period.* The goal during this process is to solicit comments concerning the analysis presented in the draft EA. A 30-day public comment period begins on the date of notification of the document availability in the local newspaper. The scope of the public comment period was 31 May 2004 to 30 June 2004. Upon request by the VA DEQ, the comment period was extended to 9 July 2004.

5. *Prepare a final EA.* Following the public comment period, a final EA is prepared. This document is a revision (if necessary) of the draft EA, includes consideration of public comments, and provides the decisionmaker with a comprehensive review of the proposed action and the potential environmental impacts.

6. *Issue a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA).* The final step in the process is either a signed FONSI/FONPA, if the analysis supports this conclusion, or a determination that an EIS would be required for the proposal.

2.5 OTHER REGULATORY AND PERMIT REQUIREMENTS

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA), other federal statutes, such as the Clean Air Act (CAA), the Clean Water Act, Endangered Species Act, and the National Historic Preservation Act, Executive Orders, City of Hampton's Chesapeake Bay Preservation Act, and other applicable statutes and regulations. Langley AFB has initiated informal consultation with the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Historic Resources. Table 2-2 lists the applicable federal, state, and local regulatory requirements and potential for permit requirements if the proposed action were undertaken.

Table 2-2 Potential Permit Requirements		
Type of Permit or Regulatory Requirement	***Issue***	***Administering Agency***
Virginia Water Protection Permit (Section 401 Water Quality Certification)	Water quality certification. Discharge to water. Section 404 should be listed	Virginia Department of Environmental Quality; Virginia Marine Resources Commission
Corps of Engineer Section 404	Required for authorizing fill within wetlands or waters of the United States	U.S. Army Corps of Engineers, Norfolk District
Endangered Species Act	Required to consult on impacts of project implementation on federally listed or proposed threatened and endangered species	USFWS
State Endangered Species Act	Rare, threatened, and endangered plant and animal species	Virginia Department of Conservation and Recreation/Heritage Division; Virginia Marine Resources Commission
Habitat Permits (Subtitle II of title 28.2 of the Code of Virginia)	Physical encroachment in Subaqueous or bottomland, tidal wetland, or coastal primary sand dunes	Virginia Department of Environmental Quality; Virginia Marine Resources Commission; U.S. Army Corps of Engineers, Norfolk District
Clean Water Act	Virginia Pollutant Discharge Elimination System storm water permit	Commonwealth of Virginia Department of Conservation and Recreation
Chesapeake Bay Preservation Act	Economic development and water quality protection in Chesapeake Bay Preservation Areas	Chesapeake Bay Local Assistance Department
Virginia Stormwater Management Act and Regulations	Stormwater, Best Management Practices	Virginia Department of Conservation and Recreation/Heritage Division; Chesapeake Bay Local Assistance Department
Virginia Erosion and Sediment Control Law	Sediment Control	Virginia Department of Conservation and Recreation/Heritage Division; Chesapeake Bay Local Assistance Department
Section 106 Approval Historical/Archaeological	Archaeology, historical sites, cultural resources	Virginia Department of Historic Resources/Virginia State Historic Preservation Office
Virginia Coastal Resources Management Program; Coastal Zone Management Act of 1972	Coastal Zone Federal Consistency Review	Commonwealth of Virginia Department of Environmental Quality

2.6 MITIGATION MEASURES

In accordance with 32 CFR 989.22, Langley AFB must indicate if any mitigation measures would be needed to implement the proposed action or any alternative selected as the preferred alternative under this environmental assessment. For purposes of this EA (to repair and reconstruct the marina facility at Langley AFB), no mitigation measures would be needed to arrive at a finding of no significant impact or finding of no practicable alternative if the proposed action were implemented at Langley AFB.

2.7 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action or alternatives would not result in significant impacts in any resource category. Implementing the proposed action would not significantly affect existing conditions at Langley AFB. The following summarizes and highlights the results of the analysis by resource category.

Air Quality. There would be no long-term effects to the regional air quality under the proposed action. Emissions during the demolition and construction period would increase; however, they would be well below the regional thresholds, and therefore, regionally insignificant (see Appendix B). The marina operations following construction would be essentially the same as conditions found prior to September 2003 and similar to existing, baseline conditions.

Water Resources and Water Quality. The proposed action, repair and reconstruction of the marina facility, would have negligible effects on the water resources and water quality of the Back River. Boating would likely increase to levels found prior to September 2003 but use of best management practices including absorbent and containment booms (already in use), would minimize spills or discharges. However, siltation that normally results from boat propellers operating in shallow depths (as is the case now) would be reduced as a result of maintenance dredging. This would result in less turbidity and overall in slightly better water quality in the marina waters. Replacement of rip rap would also contribute to decreasing sources of turbidity.

Biological Resources. Under the proposed action, demolition and construction activities would take place on previously disturbed, developed (i.e., planted grass), or paved areas with little or no habitat to support plant and/or animal species of concern. Therefore, the potential to affect plant or animal species of concern would be minimal. Because the bottom area within the marina basin exhibits a low level of biodiversity, dredging would also not present any long-term adverse effects to the organisms found in this habitat. Shellfish growing on existing rip rap, docks, pilings, and bulkheads would be affected by the demolition and/or repair of these structures; however, the population density of these organisms is low so effects would be minor and short term. In addition, implementation of the proposed action would not result in adverse effects to threatened or endangered species because there are no such species found in

the marina facility area. If the no-action alternative were implemented, vegetation and wildlife would not be affected because no demolition or construction activities would occur.

Noise. Under the proposed action noise would be generated from demolition, construction, dredging, and transportation equipment and activities. The noise would be short term and intermittent in nature and should have minimal effect to the adjacent facilities. The nearest residential community is about a half mile to the east, across the Back River. This community should not experience any adverse effects during demolition and construction activities. Under the no-action alternative, the existing noise environment would remain unchanged. Aircraft would continue to generate average noise levels of 70 decibels (dB) to 75 dB at the marina facility.

Hazardous Materials and Waste. Under the proposed action, demolition of the existing marina building, peninsula, wet slips, and rip rap may result in materials considered hazardous waste. Any demolition debris deemed recyclable would be marketed; otherwise the debris would be disposed of in a local landfill permitted for this type of waste. Dredge material would be analyzed and depending on the chemical characteristics would be disposed in local, permitted, and approved sites that accept this type of debris. Under the no-action alternative, none of the marina facilities would be demolished resulting in no hazardous debris material being generated. Under both the proposed action and no-action alternative, no significant changes to hazardous materials and waste handling, collection, or transport would occur.

Coastal Zone, Floodplains, and Wetlands. The proposed action would have minimal effects on the coastal zone, wetlands, or floodplains. No coastal zones would be removed or disturbed, and there would be a net reduction of impervious surface area under the proposed action. Design of all facilities and structures and associated construction activities would be in accordance with Virginia's requirements so there should be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare. No wetlands would be directly impacted by upland land disturbing activities, and erosion and sedimentation would be controlled. In-water demolition and construction of the wet slips and repairs to the bulkhead and boat ramp would not affect any wetlands. While there is the potential that improper use of siltation screens during dredging operations may cause siltation of small clumps of wetland vegetation along the shoreline, it in not anticipated to cause any long-term significant impacts. Under the no-action alternative, no demolition, repair, or reconstruction would occur. Existing conditions would be maintained, the effect on the natural and beneficial values of the floodplain would remain the same; however, the rip rap and bulkheads would continue to deteriorate, and their ability to protect the coastal zone would decrease.

Erosion and Soils. There would be no adverse effects on soils during demolition, construction, dredging, or marina operations under the proposed action. Upland construction activities would disturb approximately 1 acre of land, be short term in nature, and erosion and sedimentation controls would be used. Some potential for transport of sediment exists during movement of bottom material and dredging

activities. Proper use of siltation screens and other in-water barriers would reduce sedimentation or shoreline erosion. Dredge materials would be characterized, required permits obtained, and materials disposed of in an appropriate manner and location. There would be no adverse effects on soils under the no-action alternative because no demolition, repair, or reconstruction activities would occur; however, existing siltation of the marina basin would continue. The areas proposed for rip rap repair would not be repaired and erosion would continue to undermine the marina and reduce the shoreline.

Socioeconomics. Repair and reconstruction activities would result in minor, short-term positive input into the local Hampton economy. Continued operation of the food service at the marina building and administration of marina facility activities (leasing, rental, fuel service) of the repaired and reconstructed marina would draw the same manpower positions but return revenues to the level experienced prior to the September 2003 hurricane. No significant impacts are anticipated if the proposed action were implemented. Under the no-action alternative, socioeconomic inputs would remain essentially unchanged from existing conditions.

Visual Resources/Aesthetics. For the proposed action, impacts to visual resources from construction equipment and barge-mounted cranes would be short-lived in duration and present little adverse impacts. Once repair and reconstruction of the marina facilities and shoreline have been undertaken, the existing negative visual character of the deteriorated marina basin would no longer be apparent and visual and aesthetic resources in the marina facility environment would improve. Under the no-action alternative, visual resources would not change. Langley AFB would not repair the marina facility and the scenic perspective from on base or the Back River would remain visually unappealing. Damage from the hurricane would remain evident and the wet slip area would remain closed to Langley AFB and military personnel, their families, and guests.

Cultural Resources. Under the proposed action, the marina building would be demolished. Although the building is a contributing element to the Langley Field Historic District, demolition of the marina building would not have a significant affect to the district's overall historic context and would be offset by repair and renovation of adjacent buildings (617 and 607) to resemble their historic appearance. Langley AFB has begun Section 106 consultation with the Virginia Department of Historic Resources (DHR). No impacts to traditional resources would be expected because none have been identified at Langley AFB. Under the no-action alternative, the marina building would not be demolished. Negligible impacts to cultural resources as a result of ongoing activities at Langley AFB would be expected.

CHAPTER 3

DESCRIPTION OF AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ANALYSIS APPROACH

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that an EA should consider, but not analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, an EA should not be encyclopedic; rather, it should be succinct. NEPA also requires a comparative analysis that allows decision-makers and the public to differentiate among the alternatives. This EA therefore, focuses on those resources that would be affected by the proposed demolition, repair, and reconstruction of the marina facility at Langley AFB, Virginia.

CEQ regulations (40 CFR Parts 1500-1508) for NEPA also require an EA to discuss impacts in proportion to their significance and present only enough discussion of other than significant issues to show why more study is not warranted. The analysis in this EA considers the current conditions of the affected environment and compares those to conditions that might occur should either of the alternatives be implemented.

Resources Analyzed

Table 3-1 presents the results of the process of identifying resources to be analyzed in this EA. This assessment evaluates air quality; water resources and water quality; biological resources; noise; hazardous materials and waste management; coastal zone, floodplains, and wetlands; erosion and soils; socioeconomics; visual resources/aesthetics; and cultural and traditional resources. These resources have shown to be potentially affected by implementation of the proposed action.

Table 3-1 Resources Analyzed in the Environmental Impact Analysis Process		
Resource	***Potentially Affected by Marina Facility Repair and Reconstruction***	***Analyzed in this EA***
Air Quality	Yes	Yes
Water Resources and Water Quality	Yes	Yes
Biological Resources	Yes	Yes
Noise	Yes	Yes
Hazardous Materials and Hazardous Waste Management	Yes	Yes
Coastal Zone, Floodplains, and Wetlands	Yes	Yes
Erosion and Soils	Yes	Yes
Socioeconomics	Yes	Yes
Visual Resources/Aesthetics	Yes	Yes
Cultural and Traditional Resources	Yes	Yes
Land Management, Use, and Recreational Resources	No	No
Transportation	No	No
Environmental Justice	No	No
Safety	No	No

Resources Eliminated from Further Analysis

Langley AFB assessed numerous resources (refer to Table 3-1) that, in accordance with CEQ regulations, warrant no further examination in this EA. The following describes the rationale for this approach.

Land Management, Use, and Recreational Resources. Langley AFB includes developed and undeveloped lands. Main categories of developed land uses include airfield and flightline, industrial areas, administrative facilities, housing, recreation sites, and medical facilities. Undeveloped lands are commonly called open space in planning documents and may include natural or cultural resource preservation sites, safety buffers, or other similar land uses. The marina is located in the developed portion of the base in what is commonly referred to as the Heavier-than-Air (HTA) area. Predominant uses in the HTA are aircraft operations and maintenance, officer accompanied housing, and HQ ACC administrative facilities. The proposed action and no-action alternative would not change the land management or use designation and would be consistent with base land use and plans. The marina is a source of recreational activity and provides boat storage and sailing lessons. Following the September hurricane, recreational opportunities (i.e., wet slip moorage and sailing lessons) were curtailed. If the proposed action were implemented, recreation would be restored and these recreational resources would continue.

Transportation. Implementation of the proposed action is not expected to affect transportation resources. The base contains sufficient on-base access and roadways to support the proposed construction activities without degradation of service. Traffic studies at the base established that local and regional road networks provide acceptable levels of service (Air Force 2003a). These studies also indicated that the local and regional road networks had capacity to accommodate the levels of additional traffic comparable to those resulting from the proposed construction activities. Because of the lack of impacts, transportation resources were eliminated from further analysis. Following reconstruction of the marina facilities, boat traffic may increase at the marina from current conditions. However, this boat traffic would not be substantially different from baseline conditions found prior to the 2003 hurricane.

Environmental Justice. Environmental justice concerns the disproportionate effect of a federal action on low-income or minority populations. The existence of disproportionately high and adverse impacts depends on the nature and magnitude of the effects identified for each of the individual resources. If implementation of the proposed action were to have the potential to significantly affect people, those effects would have to be evaluated for how they adversely or disproportionately affect low-income or minority communities. Because the proposed action takes place within the confines of the base, and minority or low-income groups would not be disproportionately affected by implementation of the proposed action, environmental justice was eliminated from further analysis.

Safety. Effects to human safety related to demolition and construction as well as dredging operations would be minimal and no different from standard, on-going activities occurring at Langley AFB. During demolition and construction, prescribed industrial safety standards would be followed. Dredging operations would be performed in accordance with all applicable safety directives. Navigational hazard warning signs will be posted and existing "No Wake" ordinances will continue to be enforced. There are no specific aspects of demolition, construction, or dredging operations that would create any unique or extraordinary safety issues. Since no aspect of the project proposal would alter the safety conditions for the impact area, this resource has been eliminated from further analysis.

3.2 AIR QUALITY

Air quality in a given location is described by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

The 1970 Clean Air Act (CAA) and its subsequent amendments (CAAA) established the National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns (PM_{10}), and lead (Pb). These standards, presented in Table 3-2, represent the maximum allowable

Table 3-2 State and National Ambient Air Quality Standards					
	Virginia Standards			*National Standards*	
POLLUTANT	AVERAGING TIME	PRIMARY	SECONDARY	PRIMARY	SECONDARY
Ozone (O_3)[A]	1 Hour[B]	235 $\mu g/m^3$ (0.12 ppm)	Same as Primary	235 $\mu g/m^3$ (0.12 ppm)	Same as Primary
	8 Hour	0.08 ppm	Same as Primary	0.08 ppm	Same as Primary
Carbon Monoxide (CO)	1 Hour	40 mg/m^3 (35 ppm)	--	40 mg/m^3 (35 ppm)	--
	8 Hour	10 mg/m^3 (9.0 ppm)	--	10 mg/m^3 (9.0 ppm)	--
Nitrogen Dioxide (NO_2)	Annual Average	100 $\mu g/m^3$ (0.053 ppm)	Same as Primary	100 $\mu g/m^3$ (0.053ppm)	Same as Primary
	24 Hour	--	--	--	--
Sulfur Dioxide (SO_2)	Annual Average	80 $\mu g/m^3$ (0.03 ppm)	--	80 $\mu g/m^3$ (0.03 ppm)	--
	24 Hour	365 $\mu g/m^3$ (0.14 ppm)	--	365 $\mu g/m^3$ (0.14 ppm)	--
	3 Hour	--	0.5 ppm	--	0.5 ppm
Particulate Matter PM_{10}	Annual Arithmetic Mean	50 $\mu g/m^3$	Same as Primary	50 $\mu g/m^3$	Same as Primary
	24 Hour	150 $\mu g/m^3$	Same as Primary	150 $\mu g/m^3$	Same as Primary
Particulate Matter[1] $PM_{2.5}$[C]	Annual Arithmetic Mean	15 $\mu g/m^3$	Same as Primary	15 $\mu g/m^3$	Same as Primary
	24 Hour	65 $\mu g/m^3$	Same as Primary	65 $\mu g/m^3$	Same as Primary
Lead (Pb)	Calendar Quarter	1.5 $\mu g/m^3$	Same as Primary	1.5 $\mu g/m^3$	Same as Primary
Total Suspended Particulates (TSP)	Annual Geometric Mean	75 $\mu g/m^3$	60 $\mu g/m^3$	--	--
	30 Day	--	--	--	--
	7 Day	--	--	--	--
	24 Hour	260 $\mu g/m^3$	150 $\mu g/m^3$	--	--

[A] USEPA promulgated new federal 8-hour ozone standards on April 15, 2004.
[B] 1-hour standards will be revoked as of April 2005.
[C] USEPA promulgated new PM standards; however, PM 2.5 has not been regulated.

atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects.

Based on measured ambient criteria pollutant data, the U.S. Environmental Protection Agency (USEPA) designates all areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. The CAA requires each state to develop a State Implementation Plan (SIP) that is its primary mechanism for ensuring that the NAAQS are achieved and maintained within that state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants. The CAA provides that federal actions in nonattainment and maintenance areas do not hinder future attainment with the NAAQS and conform to the applicable SIP (i.e., Virginia SIP).

The CAA also establishes a national goal of preventing degradation or impairment in federally designated Class I areas. Class I areas are defined as those areas where any appreciable degradation in air quality or associated visibility impairment is considered significant. As a part of the Prevention of Significant Deterioration (PSD) Program, Congress assigned mandatory Class I status to all national parks, national wilderness areas (excluding wilderness study areas or wild and scenic rivers), and memorial parks greater than 5,000 acres. In Class I areas, visibility impairment is defined as atmospheric discoloration (such as from an industrial smokestack) and a reduction in regional visual range. Visibility impairment or haze results from smoke, dust, moisture, and vapor suspended in the air. Very small particles are either formed from gases (sulfates, nitrates) or are emitted directly into the atmosphere from sources like electric utilities, industrial fuel burning processes, and vehicle emissions. Stationary sources, such as industrial areas, are typically the issue with impairment of visibility in Class I areas, so the permitting process under the PSD program requires a review of all Class I areas within a 62-mile (100- kilometer) radius of a proposed industrial facility. Mobile sources, including aircraft and their operations at Langley AFB, are generally exempt from review under this regulation. While the review under the PSD permit program does not apply directly to base operations at Langley AFB, this analysis assessed a 62-mile radius area as a screening tool for reviewing potential visibility impacts.

Pollutants considered in the analysis for this EA include the criteria pollutants measured by state and federal standards. These include volatile organic compounds (VOCs), which are precursors to (indicators of) O_3, nitrogen oxides (NO_x), which are also precursors to O_3 and include NO_2 and other compounds (CO and PM_{10}). Airborne emissions of lead (Pb) and hydrogen sulfide (H_2S) are not addressed because the affected areas contain no significant sources of these criteria pollutants nor are they associated with the proposed action and no-action alternative.

Affected Environment

The affected environment varies according to pollutant. For pollutants that do not undergo a chemical reaction after being emitted from a source (PM_{10}, CO, and SO_2), the affected area is generally restricted to a region in the immediate vicinity of the base. However, the region of concern for O_3 and its precursors (NOx and VOCs) is a larger regional area (i.e., the Hampton Roads Air Quality Control Region [AQCR]) because they undergo a chemical reaction and change as they disperse from the source. This change can take hours, so depending upon weather conditions, the pollutants could be some distance from the source.

Another factor used in defining the affected environment is mixing height. Mixing height is the upper vertical limit of the volume of air in which emissions may affect air quality. Emissions released above the mixing height become so widely dispersed before reaching ground level that any potential ground-level effects would not be measurable. Emissions of pollutants released below the mixing height may affect ground-level concentrations. The portion of the atmosphere that is completely mixed begins at the earth's surface and may extend up to altitudes of a few thousand feet. Mixing height varies from region to region based on daily temperature changes, amount of sunlight, and other climatic factors. An average

mixing height of 4,000 feet conservatively characterizes the conditions at Langley AFB and its vicinity. This mixing height was derived from a review of historical data (USEPA 1972) and a detailed analysis of morning and afternoon mixing heights at a nearby upper air monitoring station in Wallops Island, Virginia (USEPA 2000a). Impacts of the proposed action can be evaluated in the context of the existing local air quality, the baseline emissions for the base and region, and the relative contribution of the proposed action to regional emissions.

Base Environment. The Virginia Department of Environmental Quality (DEQ) has primary jurisdiction over air quality and sources of stationary source emissions at Langley AFB. Stationary source emissions at Langley AFB under the baseline (and under no-action) include jet engine testing (off the aircraft), degreasing, storage tanks, fueling operations, heating and power production, solvent usage, and surface coating. Emissions from stationary sources at the base constitute a small fraction of overall base emissions, as shown in Table 3-3 below. Hypothetical calculations for all criteria pollutants demonstrate that maximum potential base-wide emissions from stationary sources are less than the CAA Title V threshold (i.e., 100 tons per year), with the exception of NO_x. However, actual emissions are significantly less than the potential emissions (Air Force 2000a). Therefore, the base has applied for, and received, a Synthetic Minor Operating permit from the state of Virginia. This operating permit effectively caps the base's emissions by imposing federally enforceable emission limits, ensuring the base's status as a Minor Stationary source.

Table 3-3 Baseline Emissions for Langley AFB Affected Environment

Base Emissions Source Category	***Pollutants (Tons/Year)***				
	CO	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*
Stationary Sources	14.5	33.1	29.8	1.0	4.5
Mobile Sources	760.9	104.5	241.2	5.6	8.2
TOTAL Base Emissions	775.4	137.6	271.0	6.6	12.7

Source: Air Force 2000a.

Mobile source emissions include aircraft operations (takeoffs and landings), aerospace ground equipment, ground support equipment, and maintenance aircraft operations performed with the engines still mounted on the aircraft (engine run-ups and trim checks). Emissions from aircraft takeoffs and landings, as well as other flight operations at the base, considered all based and transient aircraft. Aircraft emissions were calculated for all flight activities below the mixing height (4,000 feet). These emissions, combined with those from the other mobile sources, account for the majority of the emissions from the base.

Regional Environment. Langley AFB is located in the Hampton Roads Intrastate Air Quality Control Region (AQCR). The Hampton Roads Intrastate AQCR includes four counties (York, James City, Isle of Wright, and Southampton) as well as nine independent cities (Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg). This area includes substantial industry, several military and commercial airfields, and a large population that generates

emissions. Table 3-4 summarizes the regional emissions (stationary and mobile) of criteria pollutants and precursor emissions for the Hampton Roads AQCR.

Table 3-4 Regional Emissions for Langley AFB Affected Environment

Regional Emissions	***Pollutants (Tons/Year)***				
	CO	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*
Hampton Roads AQCR	257,325	79,750	83,560	95,515*	42,659*

Sources: Commonwealth of Virginia 1996; *USEPA 2004.

Air quality in the Hampton Roads AQCR has been designated as either in "attainment" or "unclassifiable/attainment" with the NAAQS for all pollutants except the new 8-hour ozone standard. USEPA in its April 2004 determination has found the Hampton Roads AQCR to be in nonattainment for the 8-hour ozone (USEPA 2003) effective June 15, 2004. Hampton Roads AQCR has until June 2007 to reach attainment (USEPA 2004).

The Hampton Roads AQCR inventory for CO, VOCs, and NO_x was obtained from the State Implementation Plan (SIP) Revision (i.e., maintenance plan) and includes stationary point source emissions, on-road mobile sources, off-road mobile sources, and area sources. Point source emissions include stationary source emissions from Langley AFB and other military and industrial sources in the area. On-road mobile source emissions include emissions from vehicular-related activities from on-road motor vehicles that are registered to use public roadways and utilize gasoline or diesel fuels. This category includes the contribution of off-base use of private and government vehicles associated with military and civilian personnel at Langley AFB. Off-road mobile sources include aviation emissions, locomotive emissions, and marine vessels. Aviation and marine vessels include both commercial and military sources. Area source emissions include those from solvent/coating use, vehicle refueling, as well as combustion emissions from heating of industrial, commercial, and residential facilities.

Environmental Consequences

Proposed Action

The air quality analysis for the proposed action at Langley AFB quantifies the changes (increases and decreases) due to the marina facilities repair and reconstruction. The CAA prohibits federal agencies from supporting activities that do not conform to a SIP that has been approved by the USEPA. To assess the affects of the proposed action, analysis must include direct and indirect emissions from all activities that would affect the regional air quality. Emissions from proposed actions are either "presumed to conform" (based on emissions levels which are considered insignificant in the context of overall regional emissions) or must demonstrate conformity with approved SIP provisions.

Emissions from the proposed action include both temporary construction/demolition and permanent operational emissions. Demolition and construction emissions associated with the proposed action include fugitive dust (PM_{10}) from grading and combustion (primarily CO and NO_x, and smaller amounts

of VOCs, SO_x, and PM_{10}) from heavy-duty diesel construction equipment exhaust (e.g., trucks, barges, pile drivers, rollers). Construction emissions estimates were based on conservative assumptions and assumed that site grading activities (generating fugitive dust) would be occurring on 50 percent of the affected acreage on any working day, throughout the 9-month construction period. These estimations also assumed that grading activities would occur on approximately 1 acre (the peninsula) and include soil stocking and watering in order to reduce fugitive dust. Exhaust emissions from heavy-duty diesel construction equipment were based on a mix of typical construction equipment for the project (Air Force 2004a). Table 3-5 summarizes emissions during the demolition, construction, and dredging phases. Emissions from grading are estimated to occur over a 1 month construction timeframe. The remainder of the emissions is from equipment related to building construction, paving (dry slip and marina building parking area), and marina pier construction. Demolition activities are estimated for 3 months; dredging is estimated for 30 days.

Table 3-5 Projected Pollutant Emissions

	Pollutants (Tons/Year)				
	CO	***VOCs***	***NO_x***	***SO_2***	***PM_{10}***
Demolition	0.26	0.05	0.52	0.04	0.06
Construction	2.67	.27	1.77	0.15	0.29
Dredging	0.61	0.07	2.52	0.73	0.07
Total	**3.54**	**0.40**	**4.81**	**0.92**	**0.41**

Source: USAF Air Conformity Applicability Model (ACAM) 4.0.2 (Air Force 2004a)

Under the proposed action, emissions from the construction period would be 2.67 tons per year of CO and 0.29 tons per year of PM_{10}. Demolition emissions of CO would be 0.26 tons per year and 0.06 tons per year of PM_{10}, well below regional significance criteria and *de minimus* thresholds (257,325 tons per year for CO and 42,659 tons per year of PM_{10}) established by the federal general conformity rule. Emissions from dredging estimated over a 20 day period would result in 0.07 tons PM_{10}. Construction, demolition, and dredging emissions under the proposed action would not exceed *de minimus* threshold levels and would conform with the Virginia CO and PM_{10} SIPs.

Impacts to air quality associated with the proposed demolition, construction, and dredging activities under the proposed action would be short-term; no long-term emissions would occur. The impacts of fugitive dust would be minimized through implementation of dust control measures (i.e., water application on soil) as outlined in Code of Virginia regulations 9 VAC 5-50-60 *et seq.* of the regulations for the *Control and Abatement of Air pollution*. Even though it is not anticipated that there will be open burning, Langley AFB would follow the requirements for permitting found under 9 VAC 5-40-5600 *et seq*. Emissions during the demolition, construction, and dredging period would increase; however, they would be well below the regional thresholds, and therefore, regionally insignificant.

No-Action Alternative

Under the no-action alternative, Langley AFB would not repair, demolish, or reconstruct the marina facilities at this time. Impacts to this resource would not be expected since baseline emissions (as described under the affected environment) would remain unchanged.

3.3 WATER RESOURCES AND WATER QUALITY

Water resources refer to surface and subsurface water, including lakes, ponds, rivers, and streams within a watershed. Subsurface water, commonly referred to as groundwater, is typically found in areas known as aquifers. Groundwater is typically recharged during precipitation events and is withdrawn for domestic, agricultural, and industrial purposes. The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the CWA is to restore and maintain the integrity of the nation's waters.

Water resources and water quality include surface and groundwater features located within the base and watershed affected by existing and potential runoff from the base. The affected environment is defined as the Langley AFB and the immediate vicinity of the marina, including the Back River, a tributary to Chesapeake Bay.

Affected Environment

Langley AFB is located entirely within the Chesapeake Bay watershed (refer to Figure 1-3). The base occupies a flat lowland peninsula with a gentle eastward slope of 1 ft per mile and elevations of 5 to 11 ft above mean sea level within the Atlantic Coastal Plain physiographic province. Langley AFB is bordered to the northeast by the Northwest Branch of the Back River, and to the southeast by the Southwest Branch of the Back River (refer to Figure 2-1). The Back River is estuarine and primarily saline in nature. The marina is located on the Southwest Branch of the Back River. Groundwater in the vicinity is shallow and is relatively brackish given the site's proximity to the Chesapeake Bay.

Water quality within the Back River is influenced by stormwater runoff from Langley AFB. Stormwater runoff from base parking lots and the airfield runways can carry spilled oil, grease, hydraulic fluid, and jet fuel into the Back River; however the releases are sporadic and in minimal quantities (Air Force 2000b). Fifty-three outfalls drain Langley AFB, with 26 outfalls associated with areas that contain industrial activities. Near the marina, outfall 004 collects drainage from nearby parking lots and surrounding use areas and discharges into the marina waters. Past chemical analyses (Air Force 2001a) at these outfalls have indicated that there were no Resource Conservation and Recovery Act (RCRA)-regulated hazardous wastes encountered. The absorbent boom that is generally floating at the outfall reduces pollution by absorbing floating petroleum product that might be discharged into the river. Stormwater runoff pollutant levels at Langley AFB fall within acceptable limits specified in Virginia's Pollutant Discharge

Elimination System (VPDES) permit (40 CFR 122). The base's Stormwater Pollution Prevention Plan identifies best management practices (e.g., cleaning paved surfaces, containment diking, drip pans, and drum management) for minimizing runoff contamination (Air Force 2000b).

As presented in Chapter 1, Langley AFB is a participant in the Federal Agencies Committee established by the USEPA's Chesapeake Bay Program. Through agreement, the Federal Agency Committee, and thus Langley AFB, is committed to long-term and specific water quality and ecosystem goals for the Chesapeake Bay watershed.

Environmental Consequences

Proposed Action

There would be negligible effects to surface water features at Langley AFB from proposed demolition, construction, and dredging activities and marina operations. Impacts on water quality to the Back River would be minimized during by implementing best management practices such as erosion control (i.e., watering any disturbed soil), sediment barriers, siltation screens, dewatering, and adhering to construction permit requirements. Because upland construction activities would disturb approximately 1 acre of land, Langley AFB would prepare an Erosion and Sediment Control Plan (required for disturbing more than 2,500 sf of land within a Virginia's Coastal Resources Management Program [VCP] Resource Protection Area) and implement measures to minimize the amount of erosion and sediment transport to the Back River or other off site areas in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.). The Air Force will follow the calculation procedures contained in Appendix 5D of the Virginia Stormwater Management Handbook to determine the required level of stormwater treatment. Furthermore, because construction would disturb more than 1 acre of land, the Air Force would prepare a Stormwater Management Plan in accordance with Virginia's Stormwater Management Law (Virginia Code 10.1-603.5) and Regulations (4 VAC 3-20-20 *et seq*.), and applicable federal nonpoint source pollution mandates.

Overall, the amount of impervious surfaces at the marina would be reduced as a result of the proposed action. The marina site currently accounts for approximately 191,600 sf of impervious surfaces and the proposed repair and reconstruction would reduce that amount to approximately 155,000 sf. The existing 60,000-sf dry slip pavement would be repaired and an additional 15,000 sf of adjacent paved and graveled currently used as a lay down area would be capped to accommodate the 75,000 total square feet needed for the proposed reconfigured dry slip parking area. The new marina building would be relocated to a site that is already paved and constructed on top of the current pavement. Construction of the boat entrance, west of the wet slips would add approximately 4,800 sf of paved impervious area, however, the existing paved parking area on the peninsula (approximately 24,600 sf) would be demolished and replaced with turf and a concrete (5,490 sf) sidewalk. The net effect is that there would be an overall decrease in the amount of impervious surface area at the marina facility.

Dredging of the marina basin would create some siltation during the 1 month of dredging. However, the siltation would be controlled by the use of turbidity/siltation screens to reduce and confine turbidity to the immediate dredging area. Prior to the start of dredging operations, silt screens and other sediment control measures would be implemented. In addition, sampling (including but not limited to, analysis of potential polychlorinated biphenyls (PCB) and polychlorinated triphenyls (PCT) contamination) would be done and sediments analyzed using the Consensus-Based Probable Effects Concentrations (MacDonald *et al,* 2000). The dredge material samples and appropriate reports on the sampling would be provided to the USACE and DEQ's Tidewater Regional office. The Air Force would obtain a CWA Section 404 permit from the U.S. Army Corps of Engineers (USACE) for dredging in waters of the United States. Dredge materials would be disposed at an approved (by USACE Norfolk District) and permitted site. If land disposal is contemplated, dredged material will be contained for de-watering and the location of the water discharged will be identified prior to applying for permits for such activity. In the event that that upland disposal of dredged material is implemented, a liner or basin would be used.

Operation of the reconstructed marina facility would have negligible effects on the water quality of the Back River. Boating at the newly repaired marina likely would increase, as previously unusable wet slips would become functional again. As such, the potential for pollutant discharges into the marina from boat motors also would increase. The use of best management practices during marina operation, including absorbent and containment booms (already in use), would minimize the impacts of spills or discharges within the wet slip area, and best management practices such as drip pans, would be required in the dry slip area to minimize spill or discharge into the stormwater runoff. The marina would relocate the boat rinse area and continue to prohibit use of detergents, acids, or caustic cleaners; engine cleaning and boat maintenance would not be allowed as well. Signs would be noticeably posted to enforce these prohibitions (Foust 2004). Siltation that normally results from propeller wash from boats operating in shallow depths would be reduced as a result of maintenance dredging to operational depths. This would result in less turbidity and overall in slightly better water quality in the marina waters. Replacement rip rap at the tip of the peninsula and at the abandoned boat ramp would also contribute to decreasing sources of turbidity. In summary, Langley AFB currently operates under and is in compliance with its VPDES permit issued by the Virginia Department of Environmental Quality (DEQ); implementation of the proposed action would not change Langley AFB's permit status.

No-Action Alternative

Under the no-action alternative, the marina would not be dredged, the wet slips would not be available for lease and/or rental, and siltation of the marina basin would continue. The rip rap would not be replaced and the bulkheads in the wet slip would not be repaired. Therefore, existing conditions (as described under the affected environment) would remain unchanged and existing effects to water resources and water quality would continue.

3.4 BIOLOGICAL RESOURCES

Biological resources encompass plant and animal species and the habitats within which they occur. Plant species are often referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there (Hall *et al.* 1997). Biological resources for this EA include vegetation, wildlife, and special-status species occurring on Langley AFB in the vicinity of the proposed action.

Vegetation includes all existing upland terrestrial plant communities and submerged aquatic vegetation (SAV), with the exception of special-status species. The affected environment for vegetation includes those areas subject to demolition, repair, and reconstruction disturbance.

Wildlife includes all vertebrate animals with the exception of those identified as threatened or endangered or sensitive. Wildlife includes fish, amphibians, reptiles, birds, and mammals.

Special-Status Species are defined as those plant and animal species listed as threatened, endangered, or proposed as such by the USFWS. The federal Endangered Species Act (ESA) protects federally listed, threatened, and endangered plant and animal species. Species of concern are not protected by the ESA; however, these species could become listed and protected at any time. Their consideration early in the planning process could avoid future conflicts that might otherwise occur. The discussion of special-status species focuses on those species with the potential to be affected by demolition, construction, and construction-related noise. Commonwealth of Virginia species of concern are also discussed.

Affected Environment

The affected environment for the proposed action includes both upland and aquatic environments. The upland area of the proposed action is on improved grounds in the developed portion of the base. Improved grounds have lawns and landscape plantings that require planned and performed maintenance activities. Urban, residential, and commercial areas are considered developed, providing a lower wildlife habitat potential. The affected environment for the proposed action is the current marina facility area, which has been previously disturbed and is mostly developed. The aquatic area of the project site has also been previously disturbed for development of the existing rip rap, slips, and boat ramp.

Vegetation. Uplands of mixed hardwood and pine, and bottomland areas of cypress and gum historically characterized natural terrestrial communities at Langley AFB. Shrubby marsh vegetation would have once bordered herbaceous wetland communities. Today, the majority of Langley AFB is landscaped or capped with pavement or concrete. Native terrestrial, upland communities exist as small, remnant patches characteristic of old field succession. Terrestrial vegetation associations found within and around Langley AFB include mixed oak and hardwood forest, pine woodland, and sweetgum and hardwood

bottomland (Air Force 1998b). A total of 10 percent (288 acres) of the base remains forested (Air Force 1998b).

The upland area in the vicinity of the marina is disturbed and urbanized, consisting of buildings and pavement for parking lots, including the existing dry slip area. Some small clumps of tidal marsh communities with various types of estuarine wetland vegetation, including false willow, saltmeadow cordgrass, and smooth cordgrass, have been identified along the shoreline to the east and west of the marina. Although the vegetative community in these areas may be botanically diverse, it is mostly due to the proliferation of weedy species. The majority of the marina basin was hydraulically dredged to a depth of -7 ft mlw in the 1980s. The bottom sediments within the marina support minimal amounts of SAV, due to siltation in the marina basin.

Wildlife. Wildlife on the base are wide-spread species that are habitat generalists or tolerant of disturbance and include a wide variety of game and fur-bearing animals, small mammals, waterfowl, songbirds, raptors, amphibians, reptiles, and fish. The proximity of the base to estuarine and marine habitats of Chesapeake Bay provides habitat for a variety of neotropical migrants and waterfowl.

Habitat quality for wildlife near the marina is low due to the proximity to high levels of human activity. Shellfish (oysters, clams, and mussels) are growing along the shoreline but are currently in a distressed condition due to poor water quality. Other species typically associated with the base's shoreline include fiddler crabs, mud snails, gulls, and shore birds. Limited numbers of shellfish are also growing on the docks, pilings, and seawall of the marina.

Special-Status Species. The Langley AFB Integrated Natural Resource Management Plan (Air Force 1998b) identifies Federal and State listed species of concern potentially occurring at Langley AFB. Table 3-6 identifies the species of concern that could occur within a 50-mile radius of Langley AFB. In 1996, the Virginia Department of Conservation and Recreation conducted a site survey of Langley AFB and identified no state special status species or habitat. On July 1 1997, the Virginia Department of Conservation Resources (VDCR) issued a letter indicating that the VDCR biologists identified two (bird and plant) species designated as state rare at Langley AFB: the northern harrier and eastern bloodleaf. Northern harriers live and breed in coastal marshes and migrate to Virginia during the winter months. The eastern bloodleaf is a wetland species. No federally listed threatened or endangered species are known to exist on Langley AFB, although bald eagles feed and forage in the surrounding waters and tidal flats.

Table 3-6. Federally Listed, Proposed, and Candidate and Species of Concern (State and Federal) Within a 50-Mile Radius of Langley AFB			
		Status	
Common Name	***Scientific Name***	***Federal***	***State***
Vertebrates			
Mabec's Salamander	*Ambystoma mabeei*	-	T
Canebrake Rattlesnake	*Crotalus horridus*	-	E
Northern Diamond-Backed Terrapin	*Malaclemys terrapin terrapin*	SOC	
Birds			
Forster's Tern	*Sterna forsteri*		SOC
Caspian Tern	*Sterna caspia*		SOC
Least Tern	*Sterna antillarum*	-	C
Great Egret	*Ardea alba egretta*	-	SOC
Yellow-crowned Night Heron	*Nyctanassa violacea violacea*		SOC
Glossy Ibis	*Plegadis falcinellus*		SOC
Piping Plover	*Charadrius melodius*	LT	T
Bald Eagle	*Haliaeetus leucocephalus*	LT	E
Peregrine Falcon	*Falco peregrinus*	LE(S/A)	E
American Peregrine Falcon	*Falco peregrinus anatum*	LE	T
Northern Harrier	*Circus cyaneus*	-	G5T2
Invertebrates			
Northeastern Beach Tiger Beetle	*Cincidela dorsalis dorsalis*	LT	C
Plants			
Pondspice	*Litsea aestivalis*	SOC	-
Harper's fimbristylis	*Fimbristylis peusilla*	SOC	-
Eastern bloodleaf	*Iresines rhizomatosa*	-	G5T3
Virginia least trillium	*Trillium pusillum var. virginiaum*	-	G3T2

LT – Listed Threatened
LE – Listed Endangered
EX – Believed to be extirpated in Virginia
E (S/A) – Endangered due to similarity of appearance to a Federally listed species
SOC – Species of Concern (those species that have been identified as potentially imperiled or vulnerable throughout their range).
C – Candidate (The state has enough information to list the species as threatened or endangered but this action is precluded by other listing activities).
Global Rank – the species rarity throughout its total range.
G1 – extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals' or because of some factor(s) making it especially vulnerable to extinction.
G2 – very rare and imperiled with 6 to 20 occurrences of few remaining individuals; or because of some factor(s) making it vulnerable to extinction.
G3 – either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerability to extinction because of other factors. Usually fewer than 100 occurrences are documented.
G__T__ - signifies the rank of subspecies or variety. For example G5T1 would apply to a subspecies of a species that is demonstrably secure globally (G5) but the subspecies warrants a rank of T1, critically imperiled.
Source: Air Force 1998b; USFWS 1997; DGIF 2004

Environmental Consequences

Determination of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, 2) the proportion of the resource that would be affected relative to its occurrence in the region, 3) the sensitivity of the resource to proposed

activities, and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas or disturbances cause reductions in population size or distribution of a species of concern. Analysis of potential on-base impacts focuses on whether and how ground-disturbing activities and changes in the noise environment may affect biological resources.

Proposed Action

Under the proposed action, vegetation, wildlife, and special-status species would be negligibly affected. Upland, ground-disturbing construction activities at the marina would occur on approximately 1 acre of land, no digging within dripline of existing tress would occur. The area within the marina is neither vegetated with woodlands nor contains unique upland habitat. As described above, because upland construction activities would disturb more than 2,500 sf of land within a VCP Resource Protection Area, Langley AFB would prepare an Erosion and Sediment Control Plan and implement measures to minimize the amount of erosion and sediment transport to nearby wetlands, the Back River, or other off site areas in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.). Furthermore, because construction would disturb more than 1 acre of land, the Langley AFB would prepare a Stormwater Management Plan.

Because the bottom area within the marina basin exhibits low level of biodiversity, it is mostly devoid of SAV. Shellfish growing on existing rip rap, docks, pilings, and bulkheads would be affected by the demolition and/or repair of these structures; however, the population density of these organisms is low so impacts would be minor. Dredging of sediments to -7 ft mlw (approximately 24,900 CY) within the marina basin would temporarily impact the limited sessile organisms that inhabit the bottom area. The project would displace disturbance-tolerant wildlife species occupying the marginal aquatic habitat for the duration of dredging operations. As discussed above, prior to the start of dredging operations, silt screens and other sediment control measures would be implemented. Langley AFB would obtain from USACE a CWA Section 404 permit for dredging in waters of the United States. In the event that any wetland vegetation is disturbed during dredging, the Air Force would restore and revegetate the wetlands immediately upon completion of the dredging project.

No special-status species are known or are likely to occur at the marina facility or marina waters, thus the proposed action would have no effect on threatened or endangered species, or other special status species. Because there are negligible, short-term effects anticipated with implementation of the proposed action, it is not anticipated that vegetation, wildlife, wetlands, and special-status species would be adversely affected.

No-Action Alternative

No significant effects to vegetation, wildlife, or special-status species are anticipated through implementation of the no-action alternative (as described under the affected environment). However, if

maintenance dredging does not occur, siltation within the marina basin would continue to affect water quality, which could stress the small amounts of wetland vegetation along the shoreline.

3.5 NOISE

Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Human response to noise varies by the type and characteristics of the noise source, distance from the source, receptor sensitivity, and time of day. Noise can be intermittent or continuous, steady or impulsive, and it may be generated by stationary or mobile sources. Sound levels are expressed in decibels (dB), usually weighted for human hearing (dBA). To present "average" day-night sound levels, the Day-Night Average Sound Level (DNL) metric is used. The DNL provides a single measure of overall noise impact and is the accepted single measure for determining human annoyance.

F-15 aircraft flyovers and maintenance activities dominate the noise environment on Langley AFB. The DNL is generated using specific information on the number of aircraft noise events and their respective sound levels. It averages aircraft sound levels at a location over a complete 24-hour period, with a 10-dB penalty added to noise events that take place at night (10:00 P.M. to 7:00 A.M.) to account for the increased annoyance. Noise contributions from aircraft operations and ground engine run-ups at the airfield have been calculated using the NOISEMAP model, the standard noise estimation methodology used for military airfields. NOISEMAP can be used to determine the sound exposure level (SEL) at a specific point location. SEL is a logarithmic measure of the total acoustic energy transmitted to a receptor during a noise event.

The daily operation of motor vehicles in and around Langley AFB is considered a minor source of noise. Typically, the dB value for vehicle operations would range from 50 dB (for light traffic) to 80 dB for diesel trucks. Construction noise varies greatly depending on the construction process, type and condition of equipment used, and layout of the construction site. Overall, construction noise levels are governed primarily by the noisiest pieces of equipment (i.e., jackhammers, pile drivers). Table 1 shows the minimum distances at which noise from jackhammers and pile drivers could encroach on sensitive receptors without exceeding the noise criteria. Construction equipment types within the distances listed in Table 3-7 have the potential to impact the indicated land use category.

Table 3-7 Construction Equipment Noise Impact Distances (Feet)

Equipment	*Distance to Residential Land Use**	*Distance to Commercial or Industrial Land Use*
Jackhammer	56	18
Pile Driver, Impact	177	56

Note: *This land use includes any property with sleeping quarters (e.g., residences, hotels, RV parks)

In addition to construction equipment noise, impacts due to vibrations generated by different types of equipment have the potential to result in community annoyance. Pile drivers are one of the highest producers of noise and vibration among construction equipment. Building damage and community annoyance are two types of construction vibration impacts. Community annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time; cosmetic or structural damage could occur to buildings. Table 3-8 presents the minimum distance at which vibration results in community annoyance or building damage.

Table 3-8 Construction Equipment Vibration Impact Distances (Feet)

Equipment	*Distance to Human Annoyance*		*Distance to Building Damage*
Pile Driver, Impact	525 [1]	280 [2]	50
Large Bulldozer	85		*
Loaded Trucks	85		*
Caisson Drilling	85		*
Wheel Impactor	200		50

1. Frequent events – more than 70 vibration events per day
2. Infrequent events – less than 70 vibration events per day
* Distance is less than 10 feet

Affected Environment

The affected environment for construction, demolition, and dredging noise includes the location of the existing marina and its associated facilities and infrastructure. The location is in the industrialized portion of the base and includes mostly parking areas and administrative buildings. Residential homes located at a distance of approximately 0.5 miles across from the marina on the Back River could be included in the affected environment

Environmental Consequences

Proposed Action

No long-term significant impacts would result from implementing construction, demolition, and dredging activities under the proposed action. The marina is located within the Langley AFB 70 to 75 dB DNL noise contours (Air Force 2002). Under the proposed action, noise levels would increase in the vicinity of the project area. The increased noise levels during demolition, dredge activities, pile driving operations, and marina facility construction would be noticeable but unlikely to cause an increase in DNL above current levels, which include daily aircraft overflights. These increases would be minor, short-term, and temporary.

Noise from dredging activities would be similar to construction noise and would be short-term in duration. Noise from pile driving would be more noticeable, but it would not be continuous. Pile driving

would result in a repetitive, intermittent noise reoccurring several times during the pile driving activity. Pile driving operations typically produce 95 dB of noise energy approximately 50 ft from the source and considerably less a few hundred feet from the site (Air Force 2001b). Vibration noise during pile driving operations would increase noise levels at the site; however the pile driving would not be a continuous, steady operation.

Boat craft noise subsided in September 2003 following Hurricane Isabel. Boaters have continued to operate in the waters of the Back River in the vicinity of the Langley marina. Boat traffic noise would likely resume to levels in the past upon completion of the marina repair/reconstruction project. No long term significant impacts to noise would be expected through implementation of the proposed action.

No-Action Alternative

No adverse effects would be expected under implementation of the no-action alternative. The Air Force would not repair/reconstruct the marina facilities at this time. Boaters would continue to utilize the waters of the Back River in the vicinity of the Langley Marina; however, baseline noise levels (as provided under the affected environment for this resource) would not be expected to change.

3.6 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); the Occupational Safety and Health Act (OSHA); and the Emergency Planning and Community Right-to-Know-Act. RCRA defines hazardous waste as any solid, liquid, contained gaseous or semisolid waste, or any combination of waste that could of do pose a substantial hazard to human health or the environment. Hazardous materials have been identified in AFI 32-7086, *Hazardous Materials Management*, to include any substance with special characteristics that could harm people, plants, or animals when released. Waste may be classified as hazardous because of its toxicity, reactivity, ignitability, or corrosiveness. In addition, certain types of waste are "listed" or identified as hazardous in Code of Federal Regulations at 40 CFR 261.

Asbestos-containing material (ACM) is any material containing more than one percent by weight of asbestos and can crumbled, pulverized, or reduced to powder, when dry, by hand pressure. Asbestos is made up of microscopic bundles of fibers that may be airborne when distributed or damaged. These fibers get into the air and may be inhaled into the lungs, where they may cause significant health problems. Due to its availability to withstand heat, fire, and chemicals, asbestos was historically used in construction materials, and is typically found in ceiling tiles, pipe and vessel insulation, floor tile, linoleum, mastic, and on structural beams and ceilings. Laws which address the health risks of exposure to asbestos and ACMs include Toxic Substance Control Act (TSCA), OSHA regulations (29 CFR), and CAA (Section 112 of the CAA, as amended, 42 USC § 7401 *et seq*.). USEPA regulations concerning asbestos are contained in 40 CFR 61. The regulations require that the USEPA or authorized state

agencies be notified of asbestos removal projects. The 1st Fighter Wing Asbestos Management and Operations Plan provides guidance on the management of asbestos (Air Force 2004b).

Lead-based paint (LBP) was commonly used from the 1940s until the 1970s for exterior and interior painted surfaces. In 1978, the U.S. Consumer Product Safety Commission lowered the legal maximum lead content in most kinds of paint to trace amounts, therefore, buildings constructed after 1978 are presumed not to contain LBP. The use and management of LBP is regulated under Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992. Section 1017 requires the implementation of federally supported work involving risk assessments, inspection, interim controls, and abatement of lead-based paint hazards. Regulations relating to LBP can be found at 29 CFR, 40 CFR, and 49 CFR. Guidance for administrative and operations plans for managing lead-base paint-containing materials at Langley AFB is provided in the *Lead-Based Paint Management and Operations Plan* (Air Force 2003b).

Affected Environment

Operations at Langley AFB require the use and storage of many hazardous materials. These materials include flammable and combustible liquids, acids, corrosives, caustics, anti-icing chemicals, compressed gases, solvents, paints, paint thinners, pesticides, petroleum hydrocarbons, hydraulic fluids, fire retardant, and photographic chemicals.

The Langley AFB *Hazardous Waste Management Plan* (HWMP) specifies protocols for storage locations on the base and proper handling procedures for all hazardous substances (Air Force 2003c). Protocols described in the HWMP include spill detection, spill reporting, spill containment, decontamination, and proper cleanup and disposal methods. Hazardous waste is generated at Langley AFB from a variety of activities, including aircraft maintenance, wastewater treatment, soil and groundwater remediation, training exercises, civil engineering projects, printing, medical facility, services, and security. Aircraft support functions are a major source of hazardous waste at Langley AFB. These functions include hydraulics, structural maintenance, aerospace ground equipment, munitions maintenance, corrosion control, fuels management, painting, and wheel and tire maintenance.

The USEPA designates facilities as large quantity generators of hazardous waste when wastes generated exceed 2,200 pounds any month during the year. Langley AFB is a large-quantity hazardous waste generator. In keeping with the requirements outlined in the Langley AFB HWMP, hazardous waste is properly segregated, stored, characterized, labeled, and packaged for collection at a designated initial satellite accumulation point. The base has approximately 45 waste accumulation points at work locations. A licensed contractor transports the waste from the accumulation points to one of two designated 90-day Hazardous Waste Storage Areas (HWSA) where they are stored until disposal is economically practicable or before 90 days has expired, whichever comes first. A licensed disposal contractor picks up the wastes and transports it off base for disposal in a licensed disposal facility. Accumulated wastes gathered at a 90-day HWSA are analyzed, characterized, prepared for shipment, and forwarded to the Defense

Reutilization and Marketing Office in Norfolk, which is responsible for arranging permanent disposal (Air Force 2003c).

Langley AFB has a proactive program to identify asbestos and lead in all structures in order to reduce potential hazards to occupants, workers, and the environment during future construction projects. The presence of asbestos in a facility or specific portion of a facility is determined following an inspection by qualified Bio-Environmental Engineering personnel in coordination with the Asbestos Program Officer or through a contracted service. An asbestos survey is conducted whenever maintenance, repair, or minor construction could result in exposure to ACMs. Survey results for ACM and LBP materials are available in the Civil Engineering Squadron building in the Environmental Flight office.

Environmental Restoration Program. The environmental restoration program (ERP) is the process by which contaminated sites and facilities are identified and characterized and by which existing contamination is contained, removed, and disposed of to allow for beneficial reuse of the property. ERP sites include landfills, underground waste fuel storage areas (e.g., oil/water separators), and maintenance-generated wastes. Compliance activities for ERP sites address underground storage tanks, hazardous materials management, closure of active sites, polychlorinated biphenyls, water discharges, and other compliance projects that occur on or near ERP sites. Since the ERP began at Langley AFB, 47 sites have been identified on the base; one additional ERP site has been identified at Bethel Manor Housing. Eleven sites are currently regulated under the CERCLA (Tice 2004).

Environmental Consequences

The significance of potential impacts associated with hazardous materials and wastes is based on the toxicity, transportation, storage, and disposal of these substances. Hazardous materials and hazardous waste impacts are considered significant if the storage, use, transportation, or disposal of these substances substantially increases the human health risk or environmental exposure. An increase in the quantity or toxicity of hazardous materials and/or hazardous waste handled by a facility may also signify a potentially significant impact, especially if a facility was not equipped to handle the new waste streams.

Proposed Action

The Langley AFB marina facilities (i.e., wet slip, marina building) would be demolished under the proposed action. Building 615 was constructed in 1942 and served as the base civil engineering maintenance/paint shop until the early 1990s and then as a storage area for the 1st Services Squadron. The building was later renovated in 2000 to be used by the marina. Any asbestos or lead-based paint that existed in the building was removed during renovation activities.

In the event that asbestos or lead-based paint would be encountered during demolition, the materials would be disposed of by a certified contractor in accordance with the Langley AFB HWMP (Air Force 2003c). Any hazardous waste removed from the proposed action site would be properly coordinated by

base personnel and would be handled according to all applicable Air Force, local, state, and federal rules and regulations. Disposal of asbestos-containing materials would be in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640) and transported in accordance Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). Disposal of any lead-based paint would be in accordance with Virginia Lead-Based Paint Activities, Rules and Regulations (9 VAC 20-60-261). Uncontaminated construction debris would be disposed of off-site at the Bethel Sanitary Landfill or incinerated at the Hampton Steam Generation Plant (Air Force 2002). No adverse impacts to this resource would be expected under the proposed action.

Environmental Restoration Program. The location of the marina building and dry slip parking lie within ERP Site 61. Ground water and soil monitoring of the site have been implemented to protect human health and the environment. Development (i.e., construction, shoreline stabilization) at the site is permitted under terms agreed in the 1999 ROD and a Land Use Control Implementation Plan (LUCIP) developed for the site (Air Force 1999). Construction activities would adhere to the requirements noted in the ROD and LUCIP. A construction waiver approved by the Environmental Protection Agency, Virginia Department of Environmental Quality, and HQ ACC Environmental Division would be obtained prior to start of construction. Engineering controls and precautions would be implemented to protect site construction workers based on the potential for exposure to contaminants known to exist at the site. Under terms of the LUCIP, construction worker exposure at the site would be limited to 220 days.

A total of eleven monitoring wells exist at ERP Site 61. Precautions will be taken during construction to avoid or obstruct these wells. The Air Force has planned an interim remedial action at the site. Two oxygen release compound (ORC) injection wells will be placed east of building 615. Access to the ORC injection wells would need to be considered during proposed marina construction activities. The asphalt parking lot would be capped and resurfaced. No adverse environmental consequences would be expected as procedural guidelines would be developed by the ERP manager in conjunction with the base civil engineers to ensure the integrity of the site is maintained.

The wet slips and area of proposed maintenance dredging are located in ERP Site 63. A health and safety work plan (HASP) to protect on-site construction workers would be developed prior to removal of any materials from the marina. Silt screens would be used to reduce movement of disturbed sedimentation. The base would be required to coordinate with the Norfolk District U.S. Army Corps of Engineers for necessary permits. Chemical analysis of the sediments, bulkhead, and pier piles would be required to determine the type and levels of contaminated material to establish the sediments and bulk material disposal location. Previous analysis of the sediments in the marina channel area indicated elevated levels of some chemicals (i.e., polycyclic aromatic hydrocarbons [PAHs] and pesticides). The Air Force is currently developing a work plan for sediment sampling (Tice 2004). Execution of required permitting, use of silt screens, material chemical testing, and disposal of debris material would be expected to result in minimal effect to the environment. Any soil suspected of contamination will be tested and disposed of

in accordance with federal, state, and local laws and regulations. These include but are not limited to the Virginia Waste Management Act (VAC sections 10.1-1400 *et seq.*), the Virginia Hazardous Waste Management Regulations (9 VAC 20-60), and the Virginia Solid Waste Management Regulations (9 VAC 20-80).

No-Action Alternative

Under the no-action alternative, no construction, demolition, or dredging operations would occur at the Langley AFB marina facility at this time. Langley AFB would continue to generate hazardous wastes (as described under the affected environment for this resource); however none would be expected through implementation of this alternative.

3.7 COASTAL ZONE, FLOODPLAINS, AND WETLANDS

The *Coastal Zone* includes those lands governed by the VCP, pursuant to the Coastal Zone Management Act (CZMA) of 1972. The VCP outlines land and water use programs within Virginia's coastal zone which includes 83 jurisdictions, 29 counties, and 15 cities within eastern Virginia, including the city of Hampton. Virginia's coastal zone also includes its coastal waters of the United States territorial sea, extending to the three-mile (4.8-kilometer [km]) limit of Virginia sovereignty. Federal lands such as Langley AFB are statutorily excluded from Virginia's coastal zone. However, federal approval of the VCP triggers Section 307 of the CZMA and mandates that activities on federal lands that have the potential to affect coastal resources or uses on non-federal lands, comply to the maximum extent practicable with the enforceable policies of the VCP. The enforceable policies outlined in the VCP include: fisheries management, sub-aqueous lands management, wetlands management, dunes management, nonpoint source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management. Consistency with the VCP is achieved by obtaining all applicable permits and approvals required under the Enforceable Programs of the VCP prior to commencing the project

Floodplains are, in general, those lands most subject to recurring floods, situated adjacent to rivers and streams, and coastal areas. As a topographic category, a floodplain is quite flat and lies adjacent to the stream or river; geomorphologically, it is a landform composed primarily of unconsolidated depositional material derived from sediments being transported by the related stream or river; hydrologically, it is best defined as a landform subject to periodic flooding by a parent stream or river. Floods are usually described in terms of their statistical frequency. A "100-year flood" or "100-year floodplain" describes an event or an area subject to a percent probability of a certain size flood occurring in any given year. Because floodplains can be mapped, the boundary of the 100-year flood is commonly used in floodplain mitigation programs to identify areas where the risk of flooding is significant. Executive Order 11988, Floodplain Management, requires that each federal agency "shall provide leadership and shall take action

to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Wetlands are considered special category sensitive habitats and are subject to regulatory authority under Section 404 of the Clean Water Act and Executive Order 11990 *Protection of Wetlands.* They include jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those defined by the USACE and USEPA as those areas that meet all the criteria defined in the USACE's 1987 *Wetlands Delineation Manual* and under the jurisdiction of the USACE (USACE 1987).

Affected Environment

Coastal Zone. The proposed action would occur at the Langley AFB marina on the Southwest Branch of the Back River. The area lies within the coastal zone of Virginia and is designated as a VCP Resource Protection Area under the Chesapeake Bay Preservation Act. A pier was first constructed in 1932 in the marina basin and prior to the 1940s, the area adjacent to the marina was a tidal marsh environment that has been dredged and filled for base expansion. The adjacent shoreline area is an historic wetland and floodplain environment displaying hydric soil sediments and hydrology characteristic of tidal wetlands. The size of the existing floodplain and coastal zone at the marina is slowly being reduced through erosion and wave energy, and the wetland vegetation has been reduced to intermittent clumps of smooth cordgrass.

Wetlands. Wetlands at Langley AFB encompass approximately 652 acres, 462 of which are non-freshwater estuarine wetlands (Figure 3-1). Salt and freshwater marshes of the northwest and southwest branches of the Back River, New Market Creek, Brick Kiln Creek, Tabbs Creek, and Tides Mill Creek surround the base on three sides. Tidal flow from the Chesapeake Bay is substantial along these margins; however, most inland freshwater wetlands have been filled, drained to ditches, or converted into golf courses (Air Force 1998b). Most wetlands at Langley AFB are located at the northern boundary of the base along the Northwest Branch of the Back River. That area consists of a large expanse of estuarine emergent, estuarine unconsolidated bottom, and, further upland, some palustrine forested wetlands. Only clumps of emergent wetlands exist in the vicinity of the marina, due to the eroded condition of the shoreline in this area. Approximately 720 sf of fringe tidal marsh exists along the shoreline northeast of the marina between the existing dry slip and the Back River. To the southwest of the marina, the shoreline consists of a thin strip of approximately 500 sf of cordgrass between the parking area on the peninsula and the Back River.

Floodplains. The majority of Langley AFB lies within 100-year floodplain. The marina facility is entirely within the 100-year floodplain (Figure 3-2).

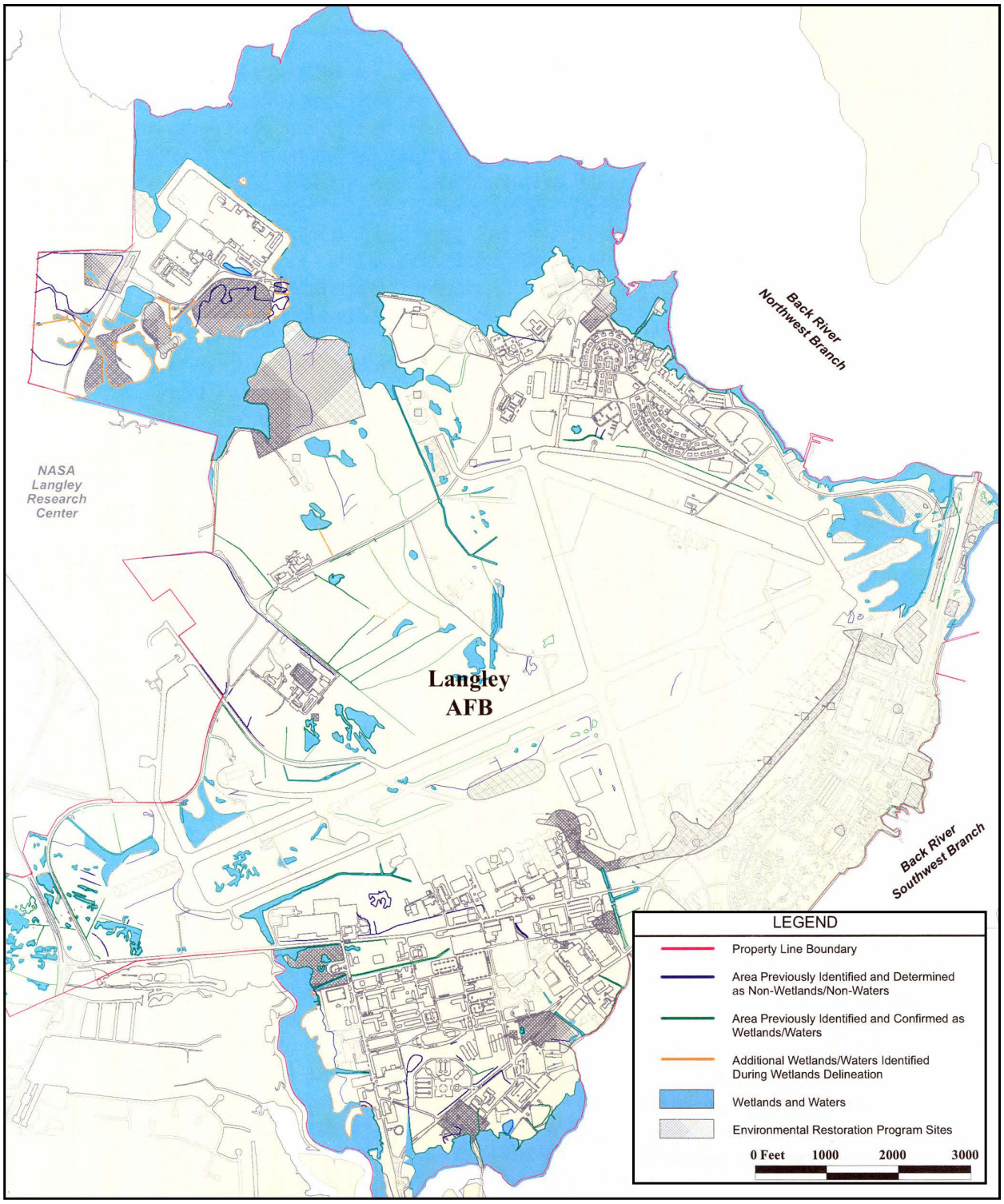


Figure 3-1 Langley AFB Wetlands

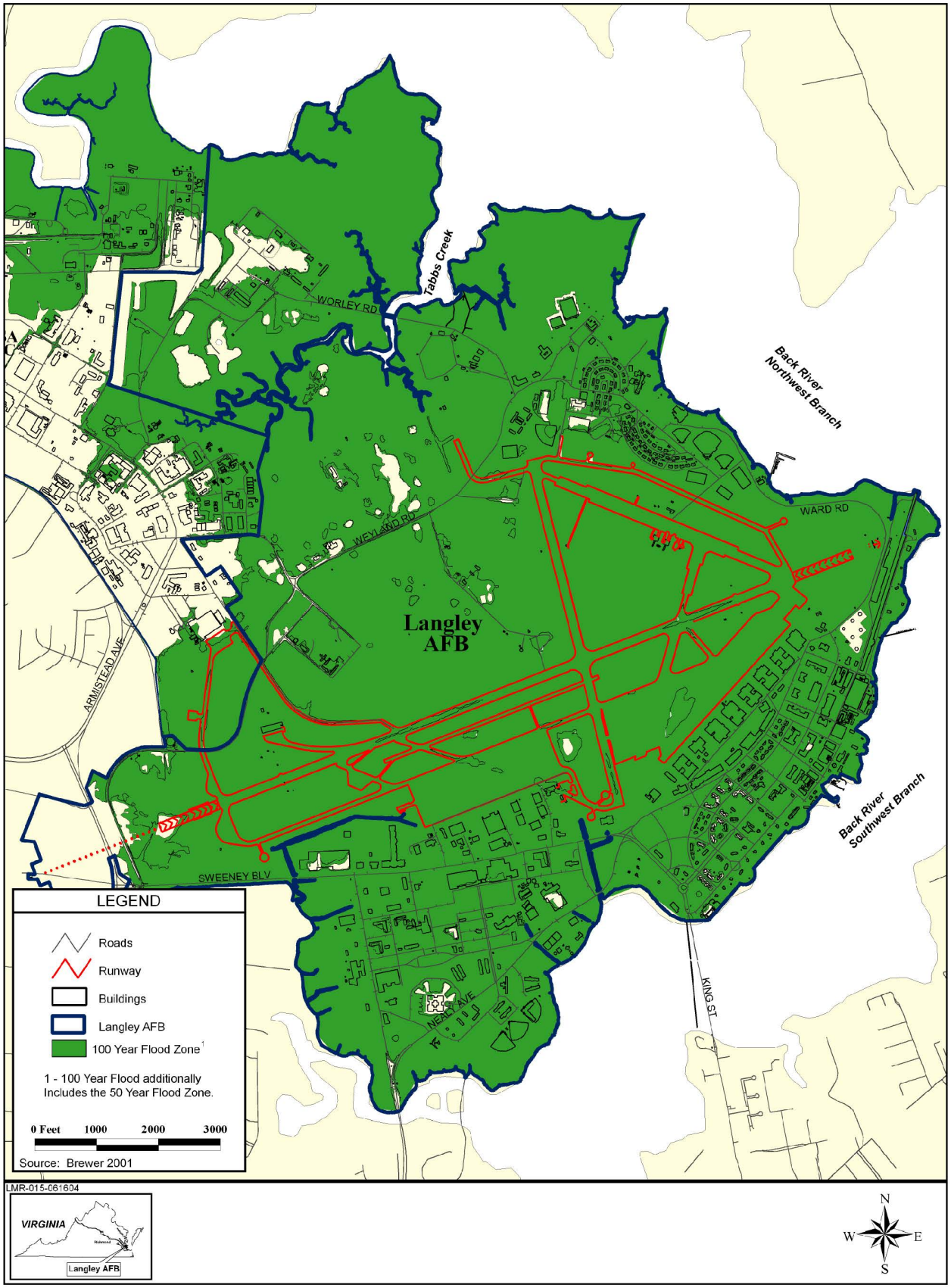


Figure 3-2 Langley AFB Floodplain

Environmental Consequences

Proposed Action

The proposed action would have minimal effects on the coastal zone, wetlands, or floodplains. No coastal zones would be removed or disturbed and rip rap repair would stabilize the shoreline under the proposed action. No wetlands would be directly impacted by upland land disturbing activities, and erosion and sedimentation would be controlled in accordance with the project Erosion and Sediment Control Plan required by Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.). In-water demolition and construction of the wet slips and repairs to the bulkhead and boat ramp would not affect any wetlands. While there is the potential that improper use of siltation screens during dredging operations may cause siltation of small clumps of wetland vegetation along the shoreline. Langley would obtain a CWA Section 404 permit from the USACE Norfolk District for dredging in waters of the United States.

The entire marina site is located within the 100-year floodplain and all construction activities would occur within the floodplain. Design of all facilities and structures and construction associated with the proposed action would be in accordance with Virginia's requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare. The proposed floating piers may even decrease the effect on human health, safety, and welfare. The existing berm in front of the dry slip area would continue to act as a barrier to floodwater at certain flood levels; however the effect on the natural and beneficial values of this floodplain would essentially remain the same.

Virginia's requirements applicable to actions in the coastal zone, wetlands, or floodplains are all managed under the VCP. Langley AFB has determined that the proposed action is consistent with all applicable enforceable policies of the VCP as summarized below.

Fisheries Management – The proposed action would have no adverse effect on the conservation and enhancement of finfish and shellfish resources or the promotion of commercial and recreational fisheries. The project location adjacent to the Back River tidal estuary might suggest opportunities for enhancing or promoting such fisheries. However, the only activity in the river would be the maintenance dredging and repair and reconstruction of the bulkhead, wet slips, and boat ramp within the confines of the marina basin. This would have minor and temporary impacts during such activities within the marina, but no other activities are proposed in the Back River outside of the marina area. While replacement of existing rip rap with geotextile liner and appropriately-sized rip rap is part of this proposed action, revegetation or restoration of large amounts of wetlands is not contemplated as part of this action. The proposed action does not involve the use of tributyltin, an ingredient used in marine antifoulant paints and highly toxic to marine organisms.

Sub-aqueous Lands Management – Maintenance dredging, repair, and reconstruction of the wet slips, bulkhead, and boat ramp would involve encroachment into, on, and over state-owned sub-aqueous lands. The marina basin would be dredged to its originally permitted depth of -7 mlw. Approximately 24,900 CY of sediments would be dredged and disposed of in accordance with a CWA Section 404 permit. Maintenance dredging of the marina has occurred in the past and the bottom sediments are mostly devoid of SAV or shellfish. The proposed action does not involve habitat restoration and activities are limited to the marina basin and peninsula and should not affect commercial fisheries. The lack of suitable shoreline and bottom substrate renders the marina area unsuitable for creation of shellfish beds or for extensive wetland restoration. Prior to demolition and construction activities, Langley AFB would obtain a permit from the Virginia Marine Resources Commission (VMRC).

Wetlands Management – The proposed action would not affect wetlands; however, demolition, repair and reconstruction of the existing wet slips, bulkhead, and boat ramp, and dredging would take place in the water of the United States. Langley AFB would obtain from the CWA Section 404 permit as well as a permit from the VMRC.

Dunes Management – There are no sand-covered dunes or sand dunes within the marina facility. A seawall protects the marina basin and portions of the shoreline are covered with rip rap.

Nonpoint Source Pollution Control – Upland demolition, repair, and reconstruction activities associated with the relocation of the marina building, parking area, marina entry, and dry slip could potentially involve minor sedimentation from imported clean fill and land disturbance. Minor excavation is required for this action and because upland construction activities would disturb approximately 1 acre of land, Langley AFB would prepare an Erosion and Sediment Control Plan (required for disturbing more than 2,500 sf of land within a VCP Resource Protection Area) and implement measures to minimize the amount of erosion and sediment transport to any nearby wetlands, the Back River, or other off site areas in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.).

Point Source Pollution Control – Langley AFB currently operates under and is in compliance with a VPDES permit administered by Virginia DEQ. The proposed action would not involve point source emissions or affect the status of the Base's VPDES permit.

Shoreline Sanitation – There are no septic tanks in or near the marina facility. The proposed action would construct a dockside sewage pump-out station that would connect to the existing sanitary sewer system as per Virginia Health Department requirements for marinas.

Air Pollution Control – The proposed action would involve minor emissions of regulated air pollutants during the demolition, repair, and reconstruction phases of the proposed action; however, these are short

term in nature, do not exceed regulated levels, and would not affect the status of the Base's Synthetic Operating Permit.

Coastal Lands Management – The marina is located in a coastal area designated as a Resource Protection Area (RPA) under the Chesapeake Bay Preservation Act. The marina was originally developed in 1932 and the proposed action constitutes a redevelopment within an RPA and outside of a locally-designated Intensely Developed Area (IDA) under 9 VAC 10-20-130. The proposed repair and reconstruction of the marina facility would remove limited amounts of vegetation (lawn turf) and disturb approximately 1 acre of soils. However, there would be a net reduction in the amount of impervious surface area, as the action would remove some paved areas and repair existing ones. The proposed location for the new marina building, while closer to the Back River shoreline, would not further encroach upon the RPA, as it would be located on a portion of the existing marina that is already paved. The existing marina building is located 10 ft from the nearest shoreline (the marina bulkhead to the south) and 150 ft from the Back River shoreline to the east. The proposed building would be relocated southeast, increasing the distance from the marina bulkhead to approximately 30 ft and decreasing the distance from the Back River shoreline to no less than 50 ft.

The proposed relocation of the marina building would not result in the loss of any vegetation within the 100-ft buffer (landward side) of the Back River shoreline as it would be constructed on a paved portion of the marina. The proposed action would comply with the performance criteria set forth in 9 VAC 10-20-120.

No-Action Alternative

Under the no-action alternative, there would be no significant effects on the coastal zone, wetlands, or floodplains since existing conditions (as described under the affected environment for this resource) would continue. However, rip rap and bulkhead deterioration would continue and may decrease the level of protection to the shoreline.

3.8 EROSION AND SOILS

This section evaluates the potential for erosion of identified soils found within the marina facility. Erosion of the shoreline causes increased turbidity and total suspended soils in the water. Heavy siltation is detrimental to shellfish. Turbidity and suspended solids also reduce sunlight, which adversely affects aquatic species.

Affected Environment

Langley AFB falls within the Outer Atlantic Coastal Plain physiographic region of southeastern Virginia. Soils in this region are mostly unconsolidated fluvial, marine, and estuarine deposits. These deposits are

underlain by beach sands, sandy clays, and gravels from the Tabb and Lynnhaven formations. Land-moving and filling activities at Langley AFB have altered soil profiles to the extent that site soils profiles do not concur with local soil surveys from adjacent counties (Air Force 1998b). Bottom sediment within the marina basin is composed primarily of sand and silt with some shelly matter. Upland soils in the vicinity of the marina are mostly fill dirt from various sources distinct from the shoreline area (Air Force 1998b).

Along the shoreline, soils are eroding into the Back River. The erosion rate along the shorelines to the west and to the east of the marina ranges from 1 to 2 ft per year (Air Force 2003d). Based on a 1 ft per year erosion rate (Hill 2001), the current siltation rate is 12 pounds per week per foot of shoreline, or 234 tons per year from the two sections of shoreline. The erosion has undermined the integrity of the dry slip/ parking area and threatens the long-term stability of the peninsula. Langley AFB is in the process of initiating a separate environmental assessment to analyze the potential impact of stabilizing the shoreline to the east (the peninsula) and west of the marina (Air Force 2003d).

Previous erosion of the shoreline adjacent to the marina has also affected water quality, increasing turbidity and total suspended solids in the water column. Additionally, over time, the buildup of silt has reduced the productivity of the waters, limiting the diversity of aquatic organisms in the marina area. As previously discussed turbidity and suspended solids also reduce sunlight, which adversely affects the growth of SAV that when abundant, filters and assimilates nutrients in the water and provides habitat and feeding areas for many aquatic organisms.

Environmental Consequences

Proposed Action

There would be no adverse effects on soils during demolition, construction, dredging, or marina operations. Ground-disturbing activities would be conducted in a manner to control erosion and sedimentation. Because upland construction activities would disturb approximately 1 acre of land, Langley AFB would prepare an Erosion and Sediment Control Plan (required for disturbing more than 2,500 sf of land within a VCP Resource Protection Area) and implement measures to minimize the amount of erosion and sediment transport to nearby wetlands, the Back River, or other off-site areas in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.).

Approximately 24,900 CY of sediments would be dredged and placed in a permitted disposal site approved by USACE. Dredging equipment has the potential to move through the water with enough velocity to generate waves of sufficient erosional force on nearby shoreline. Some potential for transport of sediment exists during movement of bottom material and dredging activities. Proper use of siltation screens and other in-water barriers would reduce sedimentation or shoreline erosion. Prior to removal,

dredge materials would be characterized, required permits obtained, and materials disposed of in an appropriate manner and location. As stated previously, Langley AFB would obtain from a CWA Section 404 permit for dredging in waters of the United States from the USACE Norfolk District.

There is also potential for shoreline erosion from increased use of recreational boats at the marina. The repair of the existing rip rap with stabilizing geotextile liners and appropriately-sized rip rap would provide long-term protection against such erosion. Although it is expected that recreational boaters would return to the marina once repaired, the use would be similar to conditions found prior to September 2003 and would not cause additional erosional impacts to the shoreline.

No-Action Alternative

There would be no adverse effects on soils under the no-action alternative because no demolition, repair, or reconstruction activities would occur; however, existing siltation of the marina basin would continue. The areas proposed for rip rap repair would not be repaired and erosion would continue to undermine the marina and reduce the shoreline.

3.9 SOCIOECONOMICS

Socioeconomics for this EA focus on the general features of the local economy that could be affected by the proposed action or alternative. The affected environment for this analysis includes the cities of Hampton, York County/Poquoson, Newport News, James City County/Williamsburg, and Norfolk, which are the areas surrounding Langley AFB and in which most socioeconomic effects would be experienced. Socioeconomics comprise the basic attributes of population and economic activity within an affected environment and typically encompasses population, employment and income, and industrial/commercial growth.

Affected Environment

Socioeconomic data provided in this section consist primarily of data for Langley AFB and the cities and towns adjacent to the base. The analysis focuses on the areas in which most socioeconomic effects would be experienced due to demolition, construction, and dredging activities.

Employment and Earnings. Employment and earnings information is presented for the following jurisdictions whose economies are closely associated with activities at Langley AFB: York County/Poquoson, James City County/Williamsburg, Newport News, Hampton, and Norfolk. Comparisons are also presented with conditions for the Commonwealth of Virginia.

In the region, total full- and part-time employment decreased from 501,950 jobs in 1990 to 498,938 in 1997, at an average rate of less than 0.1 percent annually. The largest contributions to employment in 1997 were made by services (27.0 percent), military (16.6 percent), and retail trade (14.4 percent). For

the years 1980, 1990, and 1997, the contribution of the military decreased from 21.7 percent to 21.0 percent and 16.6 percent, respectively. The sectors of the economy exhibiting the greatest addition of jobs over the period 1990 to 1997 were services and state and local government (USDCESA 2000).

In the Commonwealth of Virginia, military employment declined from 6.5 percent of total employment in 1980 to 5.7 percent in 1990 and 4.2 percent in 1997. The sectors of the economy exhibiting the greatest addition of jobs in the state over the period 1990 to 1997 were services and retail trade. The number of personnel stationed at Langley AFB stood at about 8,250 active-duty military and 2,440 civilian workers in 1999.

In addition to economic effects associated with payroll expenditures by Langley AFB personnel, the installation also purchases significant quantities of goods and services from local and regional firms. In 1999, annual expenditures by the base totaled over $266 million. Further, the Air Force estimates that the economic stimulus of Langley AFB created approximately 5,750 secondary jobs in the civilian economy (Air Force 2001c).

Population. The following information was obtained from U.S. Census Bureau data and presented in the *Initial F-22 Operational Wing Beddown Draft Environmental Impact Statement* (Air Force 2001c). The population of the region increased by less than 1 percent from 1990 to 1999, reaching 670,650 persons in 1999. By comparison, the population of the state of Virginia increased by almost 11 percent during the same period, reaching 6,872,912 in 1999, at an average annual rate of 1 percent.

Approximately 85 percent of the 2000 population of the region resides in cities and towns that range in size from Poquoson (with a population of 11,566) to Norfolk (with a population of 234,403). The largest include Norfolk, Newport News (180,150 persons), and Hampton (146,437 persons). The combined regional population is projected to increase from about 679,700 in 2000 to 712,013 by the year 2010 at an average annual growth rate of 0.5 percent.

Based on information provided by Langley AFB concerning the place of residence (by zip code) of personnel assigned to the installation, it is possible to derive an estimate of the number of personnel residing in each of a number of communities in the vicinity of the base. The largest numbers of military personnel reside in Hampton and Newport News. Compared to the general population; however, military personnel have a greater than average propensity to reside especially in Hampton and are noticeably under-represented in Norfolk, Portsmouth, and Newport News (Air Force 2001c).

Environmental Consequences

Proposed Action

Socioeconomic effects of the proposed action would occur primarily due to construction of the marina building and reconstruction of the wet slips. Construction activities would take about 9 months.

Approximately 25 to 30 workers would be employed at any one time during construction. Workers would likely commute from the surrounding area to Langley AFB on a short-term temporary basis. Local construction companies would be contracted to build the marina facilities with the majority of the construction materials purchased outside the local region and transported to the site. Construction activities would result in minor, short-term beneficial impacts to the local economy and would be easily absorbed within the Hampton Roads region.

The Langley AFB marina has been profitable in the past generating nearly $33,000 in net cash flow in Fiscal Year 1996 (Air Force 1998a). However, profits dropped considerably to about $11,000 in Fiscal Year 1998. After Hurricane Isabel struck the area in 2003, sales at the marina building have been through food and beverages only. Repair and reconstruction of the marina facility would be expected to have a positive effect to the socioeconomics at the base level. No additional persons would be expected to be employed under the proposed action. The marina currently has a staff of three fulltime and four flextime persons.

No-Action Alternative

Under the no-action alternative, no changes to the local or regional economy would be expected. The marina facility would not be repaired or reconstructed. A decision not to repair the marina facility may eventually place the marina at risk for closure as operating expenses would begin to exceed gross profit. Personnel currently employed by the marina would likely be placed elsewhere at Langley AFB.

3.10 VISUAL RESOURCES/AESTHETICS

Visual resources are defined as the natural and manufactured features that comprise the aesthetic qualities of an area. These features form the overall impression that an observer receives of an area or its landscape character. Landforms, water surfaces, vegetation, and manufactured features are considered characteristics of any area if they are inherent to the structure and function of the landscape. The significance of a change in visual character is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for visual resources in the area. For this environmental assessment, these social considerations are addressed as visual sensitivity, and are defined as the degree of public interest in a visual resource and concern over adverse changes in the quality of that resource.

Affected Environment

The existing marina is located in the HTA area of Langley AFB at the intersection of Thornell Avenue and Plumb Street. Predominant views from within the area include industrial and administrative buildings, infrastructure, roads, and parking lots. Views outside of the area are of the Southwest Branch of the Back River and homes on the opposite shore. The existing condition of the marina facilitiy is very poor. The shoreline around the marina facility contains unconsolidated rip rap made up of uneven and oversized concrete rubble, asphalt, poured concrete, and chunks of concrete with reinforcing rebar sticking out at odd angles. The piles and piers are rotting and the bulkheads have rust and portions have fallen into the marina basin. The sidewalk is uneven and debris is still apparent. The marina wet slips have been closed since September 2003 due to the damaging effects of the hurricane.

Environmental Consequences

Proposed Action

Most of the demolition, repair, reconstruction, and dredging operations would be visible to waterfront residents residing on the opposite side of the Back River, however, these homes are more than a half mile east of the marina. Barge-mounted cranes would be used during pier pile removal and pile driving operations. Heavy construction equipment used to repair and overlay the existing parking and dry slip areas would likely be observable on the waterfront. Cofferdam construction and dredging operations typically cause localized turbidity resulting in some short-term discoloration of the water.

Impacts to visual resources from construction equipment and barge-mounted cranes would be short-lived in duration; demolition, repair, and reconstruction would be short term lasting approximately 12 months and present little adverse impacts. Once repair and reconstruction of the marina facilities and shoreline have been undertaken, the existing negative visual character of the deteriorated wet slip marina basin would no longer be apparent and visual and aesthetic resources in the marina facility environment would improve.

No-Action Alternative

Under the no-action alternative, visual resources would not change. Langley AFB would not repair the marina facility and the scenic perspective from on base or the Back River would remain visually unappealing. Damage from the hurricane would remain evident and the wet slip area would remain closed to Langley AFB and military personnel, their families, and guests.

3.11 CULTURAL AND TRADITIONAL RESOURCES

Cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural resources or properties. Archaeological resources are places where people changed the ground surface or left artifacts or other physical remains (e.g., arrowheads or bottles). Archaeological resources can be classed as either sites or isolates and may be either prehistoric or historic in age. Isolates often contain only one or two artifacts, while sites are usually larger and contain more artifacts. Architectural resources are standing buildings, dams, canals, bridges, and other structures. Traditional cultural properties are resources associated with the cultural practices and beliefs of a living community that link that community to its past and help maintain its cultural identity. Traditional cultural properties may include archaeological resources, locations of historic events, sacred areas, sources of raw materials for making tools, sacred objects, or traditional hunting and gathering areas.

Affected Environment

The marina building was built in 1942 to serve as the base maintenance shop. The building is located along the eastern boundary of Langley AFB on the Back River in the HTA area. The HTA area is eligible for the National Register of Historic Places as a potential Langley Field Historic District. The marina building is a contributing element to the Historic District. No American Indian issues have been identified at Langley AFB. The base is not in possession of tribal human remains, funerary objects, sacred objects, or objects of cultural patrimony (Air Force 1998c). The HQ ACC Cultural Resource Manager has indicated that no traditional resources occur at Langley AFB (Green 2004).

Environmental Consequences

Proposed Action

Under the proposed action, the marina building would be demolished. Although the building is a contributing element to the Historic District, demolition of the marina building would not have a significant impact to the Historic District and would be offset by repair and renovation of buildings 607 and 617 to resemble their historic appearance. Langley AFB has begun Section 106 consultation with the Virginia Department of Historic Resources (DHR). No impacts to traditional resources would be expected because none have been identified at Langley AFB. Survey results indicate that much of the base exhibits a low potential for archaeological sites primarily due to previous activities such as dredging, filling, and roadwork. However, in the event that archaeological resources are discovered during any

demolition or construction activity, Langley AFB would implement the standard Air Force procedures in AFI 32-7065 for unanticipated archaeological discoveries and notification.

No-Action Alternative

Under the no-action alternative, the marina building would not be demolished. Negligible impacts to cultural resources as a result of ongoing activities at Langley AFB would be expected.

CHAPTER 4

CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

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4.1 CUMULATIVE EFFECTS

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action and alternatives, if they overlap in space and time.

Cumulative effects are most likely to arise when a proposed action is related to other actions that occur in the same location or at a similar time. Actions geographically overlapping or close to the proposed action and alternatives would likely have more potential for a relationship than those farther away. Similarly, actions coinciding in time with the proposed action and alternatives would have a higher potential for cumulative effects.

To identify cumulative effects, three fundamental questions need to be addressed:

1. Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

4.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time in which the effects could occur. Since the potential impacts of the proposed action include Langley AFB and its vicinity, the cumulative effects analysis includes only those actions occurring within this region of Langley AFB. The time frame for cumulative effects starts in August 2004 when the marina repair projects would begin. Public documents prepared by federal, state, and local government agencies were the primary sources of information for identifying reasonable foreseeable actions.

Past and Present Actions

Langley AFB is an active military installation that undergoes continuous change in mission and in training requirements. This process of change is consistent with the United States defense policy that the Air Force must be ready to respond to threats to American interests throughout the world. In 1998, the Air Force implemented a force structure change that added 12 F-15C aircraft and 134 personnel to Langley AFB, increasing the total number of F-15C aircraft to 66. Since then, the base completed establishment of a Combined Air Operations Center-Experimental and beddown of the Aerospace Expeditionary Force Center. In 2002, the Air Force selected Langley AFB for the initial wing of F-22 aircraft. Facilities to support the F-22 wing are in progress and include new hangars, flight simulator, and administrative buildings in addition to associated utilities and infrastructure. Approximately 16 acres along the flightline are being disturbed during the F-22 beddown construction.

Numerous projects are in progress at the base, including facility improvements and infrastructure upgrades. Portions of the water and wastewater treatment system, a library, and a fitness center were completed in the past year, and a new dormitory complex, operations center, and housing office are under construction.

Future Proposed Actions

In 2003, Langley AFB approved the Langley AFB General Plan, which identified areas on the base where existing missions could be expanded and where new missions could be located (Air Force 2003a). Various military construction and improvement projects are proposed and would require environmental analysis if undertaken. Examples of these projects include providing new housing, administration, operations, and support facilities.

During the timeframe Fiscal Year 04 to Fiscal Year 09, Langley has proposed to implement numerous construction projects which include: family housing, a new youth center, expansion of the hospital, construction of a new Army and Air Force Exchange Service mini-mall and service station, combined arms training range, and anti-terrorism/force protection entry gates. The following demolition projects are proposed to occur during the same time frame as the proposed action's: four residential structures in the Lighter-than-Air area and Seaplane Hangar (building 633). In addition, Langley AFB has developed a planning approach, Wing Infrastructure Development Outlook, which identifies future facility upgrades needed to support the mission and will evaluate these within a single environmental assessment.

Because implementation of the proposed action would result in temporary or very minor impacts to the resources analyzed, it is not anticipated that the proposed action, when combined with other future proposed actions, would have a negative cumulative effect on other resources. The marina repair and reconstruction proposal, when combined with future foreseeable proposals would disturb approximately 22 acres of land during a 5-year time frame. This represents less than 1 percent of total acreage (2,883 acres) of Langley AFB over the next 5 years.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

For the proposed action, most resource commitments are neither irreversible nor irretrievable. Most environmental consequences are short-term and temporary, such as air emissions and noise from construction and siltation of the Back River during dredging operations. Those limited resources that may involve a possible irreversible or irretrievable commitment under the proposed action are discussed below.

Marina repair would require consumption of limited amounts of materials typically associated with construction (wood, metal, asphalt, and fuel) and dredging operations (e.g., pipe material for the dredge and barge, oil and grease, and fuel). However, the amount of these materials used is not expected to significantly decrease the availability of these resources.

CHAPTER 5

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CHAPTER 6

PERSONS AND AGENCIES CONTACTED

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Laura Baie. Community Planner. 1 CES/CEC. April 2004.

Thomas Barnard, Jr. Associate Marine Scientist. Virginia Institute of Marine Science. April 2004.

John Davy. Department of Conservation and Recreation. Richmond, VA. April 2004.

John Evans. Regulatory Branch. USACE Norfolk District. April 2004.

Ray Fernald. Virginia Department of Game and Inland Fisheries. Richmond VA. April 2004.

Michael Foreman. Department of Forestry. Charlottesville, VA. April 2004.

Dennis Foust. Marina Manager. 1 SVS/SVROM. April 2004.

Danny French. Project Manager. 1 CES/CEC. April 2004.

Ellen Gilinsky. Virginia Water Protection Program. Richmond, VA. April 2004.

Paul Green. Cultural Resources Project Manager and Acting CEVP Branch Chief. HQ ACC. Langley AFB, VA. April 2004.

David Grimes. Virginia Department of Transportation, Environmental Division. April 2004.

Catherine Harold. Richmond, VA. April 2004.

Ellie Irons. Virginia DEQ, Office of Environmental Impact Review. April 2004.

Tom Modena. Waste Division. Richmond, VA. April 2004.

Kotur Narasimhan. Air Data Analysis Program. Richmond, VA. April 2004.

Chuck Rushby. Project Manager. 1 CES/CEC. April 2004.

John Tice. Environmental Restoration Program Manager. 1 CES/CEVR. April 2004.

Keith Tignor. Office of Plan & Pest Services. Richmond, VA. April 2004.

Tony Watkinson. Virginia Marine Resource Commission. Newport News, VA. April 2004.

Jim Watt. Project Engineer. Arcadis. Virginia Beach, VA. April 2004.

Alan Weber. Department of Health. Richmond, VA. April 2004.

Gerald Wilkes. Department of Mines, Minerals & Energy, Division of Mineral Resources. April 2004.

Harold Winer. Tidewater Regional Office. Virginia Beach, VA. April 2004.

Thomas Wittkamp. Environmental Impact Analysis Process Manager. 1 CES/CEV. April 2004.

CHAPTER 7

LIST OF PREPARERS AND CONTRIBUTORS

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Lewis "Bud" Albee, Environmental Analyst
M.S. Limnology, Bucknell University, 1994
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Years of Experience: 13

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Ph.D., Chemical Engineering, University of Houston, 1992
Years of Experience: 13

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B.S., Biology, Christopher Newport University, 1999
Years of Experience: 5

Edie Mertz, Graphics
A.A. General Education, Cerro Coso College, CA, 1994
Years of Experience: 13

Bill Palmer, Geographic Information Systems
B.A., Economics, University of Virginia, 1998
Masters of Planning, University of Virginia, 2000
Years of Experience: 4

Kevin J. Peter, Program Manager
B.A., Anthropology, Pomona College, CA, 1975
M.A., Anthropology, Washington State University, 1986
Years of Experience: 25

Kathy L. Rose, Project Manager
B.A., Political Science/German, University of Massachusetts/Amherst, 1980
M.A., International Relations, George Washington University, DC 1983
M.S., Forest Resource Management, University of Idaho, 1996
Years of Experience: 8

Greg Thompson, Biology
B.S., Forestry and Wildlife Science/Virginia Polytechnic Institute & State University, 1992
M.S., Environmental Science, Christopher Newport University, 2001
Years of Experience: 12

APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Tom Modena
Waste Division
629 East Main Street, 4th Floor
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

1. Langley AFB is in the process of preparing an Environmental Assessments (EA) for repairs at the Langley AFB Marina Facility that would occur within the boundaries of the base, along the Back River in Hampton, VA (see attachment). All proposed repairs would occur within the boundaries of the existing marina and constitute the affected environment.

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This proposed action would not add any new missions or operations; nor would any growth in base personnel occur.

4. You have been added to the project mailing list for the EA as part of the environmental impact analysis process. Please provide any comments on this proposal by May 25, 2004. If you have any specific questions relative to the proposal, we would like to hear from you. Please contact Mr. Thomas Wittkamp, Environmental Impact Analysis Process Manager, Langley AFB at (757) 764-1135.

Kenneth H. Walker

KENNETH H. WALKER
Chief, Environmental Management Flight

Attachments (2):
Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Kotur S. Narasimhan
Air Data Analysis Program
629 East Main Street, 8th Floor
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. David Grimes
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. John Davy
Department of Conservation & Recreation
203 Governor Street
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
P.O. Box 99
Gloucester, VA 23061

FROM: 1 CES/CEVQ
37 Sweeney Blvd.
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

1. Langley AFB is in the process of preparing an Environmental Assessments (EA) for repairs at the Langley AFB Marina Facility that would occur within the boundaries of the base, along the Back River in Hampton, VA (see attachment). All proposed repairs would occur within the boundaries of the existing marina and constitute the affected environment.

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This proposed action would not add any new missions or operations; nor would any growth in base personnel occur.

4. The EA will analyze the potential effects of the proposed action on environmental resources. Pursuant to the Endangered Species Act and the National Environmental Policy Act, we are requesting information regarding federally listed or proposed species that may be present in the potentially affected area at the base by May 25, 2004. If any of this information is available digitally, we would appreciate receiving it in that format. Until the extent of the potential impact to listed species is determined, we will make no decision regarding the need for a Section 7 consultation.

5. As part of the environmental analysis, Langley AFB or its contractor, The Environmental Company, Inc. may contact you during data collection efforts. In advance, we thank you for your assistance in this activity. If you have any specific questions relative to the proposal, we would like to hear from you. Please contact Mr. Thomas Wittkamp, Environmental Impact Analysis Process Manager, Langley AFB at (757) 764-1135.

Kenneth H. Walker

KENNETH H. WALKER
Chief, Environmental Management Flight

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Gerald P. Wilkes
Department of Mines, Minerals & Energy
Division of Mineral Resources
P.O. Box 3667
Charlottesville, VA 22903

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Alan Weber
Department of Health
109 Governor Street, 6th Floor
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Michael Foreman
Department of Forestry
900 Natural Resources Dr., Ste. 800
Charlottesville, VA 22903

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

2 2 APR 2004

MEMORANDUM FOR: Ms. Catherine Harold
101 N. 14th Street, 17th Floor
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Ray Fernald
Virginia Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230-1104

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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This proposed action would not add any new missions or operations; nor would any growth in base personnel occur.

4. We have added you to the mailing list for the EA as part of the environmental impact analysis process. Please provide any comments on this proposal by May 25, 2004. If you have any specific questions relative to the proposal, we would like to hear from you. Please contact Mr. Thomas Wittkamp, Environmental Impact Analysis Process Manager, Langley AFB at (757) 764-1135.

Kenneth H. Walker

KENNETH H. WALKER
Chief, Environmental Management Flight

Attachments (2):
Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Tony Watkinson
Virginia Marine Resources Commission
2600 Washington Avenue
Newport News, VA 23607

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

1. Langley AFB is in the process of preparing an Environmental Assessments (EA) for repairs at the Langley AFB Marina Facility that would occur within the boundaries of the base, along the Back River in Hampton, VA (see attachment). All proposed repairs would occur within the boundaries of the existing marina and constitute the affected environment.

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Kenneth H. Walker

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, 6th Floor
Richmond, VA 23219
Attn: Ms. Ellie Irons

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Kenneth H. Walker

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Chief, Environmental Management Flight

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Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Thomas A. Barnard, Jr.
Associate Marine Scientist
Virginia Institute of Marine Science
Gloucester Point, VA 23062

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Ms. Ellen Gilinsky
Virginia Water Protection Program
629 East Main Street, 9th Floor
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Kenneth H. Walker

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Langley AFB Regional Location Map
Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Harold Winer
Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach, VA 23462

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Proposed Marina Facility Repair

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

28 APR 2004

MEMORANDUM FOR: Mr. Keith Tignor
Office of Plan & Pest Services
1100 Bank Street
Richmond, VA 23219

FROM: 1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

SUBJECT: Proposed Marina Repair at Langley Air Force Base (AFB), VA

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Attachments (2):
Langley AFB Regional Location Map
Proposed Marina Facility Repair

CEV KHW.
CEVQ _____

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

21 May 2004

Mr. Kenneth H. Walker
Chief, Environmental Management Flight
Department of the Air Force
Headquarters 1st Fighter Wing
1 CES/CEVQ
37 Sweeney Boulevard
Langley Air Force Base, Virginia 23665

Re: Proposed Marina Repair at Langley Air Force Base (AFB) ,Virginia

Dear Mr. Walker:

The Department of Conservation and Recreation (DCR) functions to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest.

DCR has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Biotics documents the presence of natural heritage resources in the project vicinity. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

The Virginia Department of Agriculture and Consumer Services (VDACS), which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state-listed plant and insect species. The current activity will not affect any state-listed threatened or endangered plants or insects.

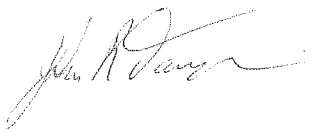
New and updated information is continually added to Biotics, please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

For your records, no state recreation facilities, state scenic resources or state natural area preserves under DCR's jurisdiction will be impacted by the proposed repairs.

Finally, the marina at Langley Air Force Base should give consideration to participating in the Virginia Clean Marina Program. The aim of the Clean Marina Program is to provide information, guidance and technical assistance to marinas on minimizing their impacts to water quality and coastal resources. For more information on this program, please visit the Clean Marina Program websites at http://www.deq.state.va.us/vacleanmarina/ and http://www.vims.edu/adv/vamarina.

Thank you for the opportunity to offer comments on this project.

Sincerely,



John R. Davy
Director, Planning & Recreation Resources

CEV KNW 5/20
CEVQ
CEC

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

5636 Southern Boulevard
Virginia Beach, VA 23462
www.deq.state.va.us

Robert G. Burnley
Director

Francis L. Daniel
Tidewater Regional Director
(757) 518-2000

May 13, 2004

Kenneth H. Walker
Chief, Environmental Management Flight
1 CES/CEVQ
37 Sweeney Blvd.
Langley AFB, VA 23665

Re: Proposed Marina Repair at Langley AFB

Dear Mr. Walker:

This office is in receipt of your letter of April 28, 2004 regarding your proposed marina project. Based on the information you submitted, it appears you will need a VWP permit from this office. When a complete VWP application is received by this office it will be processed in accordance with established timelines. Your contact for VWP application submission is Bert Parolari, VWP permit manager for this office. I suggest you also contact Mr. Jim McConathy of this office regarding the possibility of needing a permit for storm water construction activities.

Should you have any questions regarding this matter please contact Mr. Parolari at 757-518-2166 or Mr. McConathy at 757-518-2165.

Sincerely,

Harold J. Winer
Deputy Regional Director

c: Bert Parolari
Jim McConathy
Ellie Irons

CEVKW 6/2
CEVQ

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

May 25, 2004

Kenneth Walker
Chief, Environmental Management Flight
Department of the Air Force
1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665 VA

RE: ESSLOG #19541, Proposed Marina Repair at Langley Air Force Base, VA

Dear Mr. Walker:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

The *state endangered* canebrake rattlesnake (*Crotalus horridus*) has been documented in the project area. Therefore, the applicant should coordinate with this Department (Andrew Zadnik, 804-367-2733) regarding potential impacts to this species.

The federal species of concern northern diamond-backed terrapin (Malaclemys terrapin terrapin), the state special concern Forster's tern (Sterna forsteri), the state special concern least tern (Sterna antillarum), the state special concern Caspian tern (Sterna caspia), the state special concern northern harrier (Circus cyaneus), the state special concern great egret (Ardea alba egretta), the state special concern yellow-crowned night heron (Nyctanassa violacea violacea), and the state special concern glossy ibis (Plegadis falcinellus) have been documented in the project area. However, the classifications of "federal species of concern" and "state special concern" are not legal designations and do not require further coordination.

Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-3515.

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-2211. Please note that this response does not address any other environmental concerns; these issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact Andrew Zadnik at (804) 367-2733.

Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at www.dgif.virginia.gov, choose the hyperlinks to "Wildlife" then "Wildlife Information and Mapping Services", and then "Virginia Fish and Wildlife Information Service". For more information about the service, please contact Amy Martin, Online Service Coordinator, at (804) 367-2211.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,

Amy Martin

Amy Martin
Online Service Coordinator

cc: R.T. Fernald, VDGIF

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

William A. Pruitt
Commissioner

June3, 2004

Mr. Thomas Whitcamp
1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

Re: Marina Repair

Dear Mr. Whitcamp:

Thank you for the opportunity to offer comments regarding the development of an Environmental Assessment for the repair of the Langley Air Force Base marina that is situated along Back River in Hampton.

Please consider the following when designing and developing the marina facility.

1) Repair and replacement of the bulkhead may require a permit from this agency, depending on a variety of factors such as location and footprint of the structure.

2) Replacement of the pier structures probably will require a permit from this agency. However, staff recommends that you contact Ms. Traycie West at 247-2256 regarding Governor's Executive Orders Number 58 and 66 for replacement of previously authorized structures destroyed by Hurricane Isabel. Replacement of the piers may be authorized under these Executive Orders. Ms. West can provide assistance in determining whether the current proposal meets the requirements set out in the Orders. Executive Orders can be found on the Governor's web page at http://www.governor.virginia.gov/Press_Policy/Executive_Orders/EOHome.html.

3) In searching our records, Langley Air Force Base previously applied to repair the boat ramp under application number VMRC#02-0606. A draft permit was issued, but the document was not signed and returned to VMRC as is required for final permit issuance. As such, the draft permit remains unexecuted.

4) Staff recommends that Langley Air Force Base staff consider the guidelines offered in "The Virginia Clean Marina Guidebook" when designing the replacement marina facility. For more information, please contact Clean Marina Program staff at the Virginia Institute of Marine Science. Bill DePaul at (804) 684-7163 or Peter Hall at (804) 684-7768 can offer assistance, or check http://www.vims.edu/adv/vamarina/.

5) Staff recommends that Langley Air Force Base staff contact Preston Smith at the Virginia Department of Health Bureau of Wastewater Engineering in Richmond for information regarding consistency with Health Department Regulations. Mr. Smith can be reached at (804) 864-7468.

If I can offer further assistance, please contact me at (757) 247-2256.

Thank you,

Traycie L. West
Environmental Engineer

Enclosures
HM
TLW/moj

Cc: Preston Smith – Virginia Department of Health
Bill DePaul – Virginia Institute of Marine Science
Peter Hall - Virginia Institute of Marine Science

WILLIAM & MARY
VIMS
Virginia Institute of Marine Science
School of Marine Science

CCRM
Center for
Coastal Resources Management

May 20,2004

Mr. Thomas Whittkamp
1 CES/CEVQ
37 Sweeney Boulevard
Langley AFB, VA 23665

RE: Proposed Marina Repair at Langley Air Force Base (LAFB), VA

Dear Sir,

As requested in Mr. Kenneth Walker's letter of April 28, I am providing some preliminary observations for your perusal in preparing the Environmental Assessment (EA) for the subject repair activity. My preliminary comments are as follows:

1) Restricting the "affected environment" to the boundaries of the existing marina should be reexamined. At a minimum, Back River, to which the marina basin and therefore the dredging and boating activities are connected, should be included. Non-point source pollution would also presumably be reaching the river from the marina, as well as unavoidable pollutants contributed during normal marina operations.

2) Are other Best Management Practices (BMP's) in addition to the reduction in impermeable surface area being considered? This would be the time for inclusion of such non-point source controls as detention ponds, sumps for wash-down areas, grassed swales, etc., if deemed necessary. I note that the new paved parking lot parallels the river for its entire length and across one end.

3) Will petroleum be sold at the marina? If so, is a spill contingency plan being developed to deal with both minor spills and larger accidents?

4) Are there plans to develop a user education program that would, through signage, litter control, classes, etc., inform the marina users of the importance of protecting the marine environment as well as making it easier for them to do so?

Finally, I would suggest that you contact the Department of Environmental Quality-funded "Clean Marina Program", housed here at the Institute, for additional details and recommendations for management of marinas in the tidal areas of Virginia (804-684-7768).

I hope you find these comments helpful in the development of your EA.

Sincerely,

Thomas A. Barnard, Jr.
Assistant Professor

PO Box 1346 • Route 1208 Greate Road • Gloucester Point, Virginia 23062-1346 USA
804/684-7380 • FAX 804/684-7179

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

(804) 698-4000
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July 8, 2004

Mr. Thomas A. Wittkamp
1 CES/CEV
37 Sweeney Boulevard
Langley Air Force Base, Virginia 23665

RE: Draft Environmental Assessment and Federal Consistency Determination for Marina Repairs at Langley Air Force Base
DEQ-04-103F

Dear Mr. Wittkamp:

The Commonwealth of Virginia has completed its review of the above Draft Environmental Assessment and federal consistency determination (Draft EA). The Department of Environmental Quality is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. The Department is also responsible for coordinating the review of federal consistency determinations submitted by federal agencies pursuant to the Coastal Zone Management Act. The following agencies, planning district commission, and locality joined in this review:

Department of Environmental Quality (hereinafter "DEQ")
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Historic Resources
Chesapeake Bay Local Assistance Department
Department of Transportation
Virginia Institute of Marine Science
Hampton Roads Planning District Commission
City of Hampton.

In addition, the Marine Resources Commission and the City of Poquoson were invited to comment.

Project Description

The Air Force proposes to undertake five elements of marina facility repair and reconstruction, as follows (Draft Finding of No Significant Impact, pages 1-2, section 3.0):

- Demolition of the existing marina building #615, and construction of a new one in a different part of the existing paved site, construction of a parking lot for 36 cars, and consolidation and relocation of fuel tank and pumps.
- Relocation and reconfiguration of existing dry slips, demolition of a boat ramp, and stabilization of the shoreline.
- Construction of a new steel picket fence to enclose the marina building and dry slip area.
- Reconstruction of the bulkhead and sidewalks next to the wet slips, changing the boat ramp, relocating a fuel station, and replacement of a paved area by a walking path and grass park.
- Replacement of wooden wet slips with a floating timber pier, closure of two access roads, demolition of a picnic area to build a new marina entrance, and maintenance dredging in the wet slip area.

The document also discusses a no-action alternative.

Environmental Impacts and Mitigation

1. Natural Heritage Resources. The Department of Conservation and Recreation (DCR) has searched its Biotics Data System for occurrences of natural heritage resources in the project area map (Draft EA, page 1-3). "Natural heritage resources" are defined as the habitat of rare, threatened, or endangered animal and plant species, unique or exemplary natural communities, significant geologic formations, and other features of scientific interest. The Department of Conservation and Recreation ("DCR") indicates that natural heritage resources are documented as present in the project vicinity. However, due to the scope of the project activity and the distance to the resources, DCR does not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between DCR and the Virginia Department of Agriculture and Consumer Services (VDACS), DCR has the authority to report for VDACS on state-listed plant and insect species. The proposed activity will not affect any documented state-listed plant and insect species, according to DCR.

2. Air Quality. According to DEQ's Division of Air Program Coordination (hereinafter "Air Division"), and as the Draft EA indicates (page 3-7, section 3.2), Langley Air Force Base is in an ozone (O_3) maintenance area and an emission control area for volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), both of which are contributors to ozone pollution. Accordingly, the Air Force and/or its contractors and the private interests involved must restrict emissions of volatile organic compounds and oxides of nitrogen while taking any actions to restore the properties.

During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

In addition, if project activities include the burning of construction or demolition material, this activity must meet the requirements under 9 VAC 5-40-5600 et seq., for open burning, and it may require a permit (see "Regulatory and Coordination Needs," item 1, below). The Regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Air Force should contact Hampton and Poquoson city officials to determine what local requirements, if any, exist. The model ordinance includes, but is not limited to, the following provisions:

- All reasonable effort shall be made to minimize the amount of material burned, with the number and size of the debris piles;
- The material to be burned shall consist of brush, stumps and similar debris waste and clean-burning demolition material;
- The burning shall be at least 500 feet from any occupied building unless the occupants have given prior permission, other than a building located on the property on which the burning is conducted;
- The burning shall be conducted at the greatest distance practicable from highways and air fields;
- The burning shall be attended at all times and conducted to ensure the best possible combustion with a minimum of smoke being produced;
- The burning shall not be allowed to smolder beyond the minimum period of time necessary for the destruction of the materials; and

- The burning shall be conducted only when the prevailing winds are away from any city, town or built-up area.

3. Water Quality.

(a) EA Information. The EA is not specific as to the area of land disturbance associated with the demolition and construction contemplated in this project. However, according to DEQ's Tidewater Regional Office, it appears that the disturbance will exceed one acre. In addition, the project will affect state waters as a result of dredging and other construction activities.

In regard to dredged material, the EA indicates that dredged material would be analyzed and, depending on its chemical characteristics, would be disposed of in local, permitted and approved sites that accept the type of characteristics (Draft Finding of No Significant Impact, section 4.0, "Hazardous Materials and Waste" heading). The EA does not state any of the following:

- the location of the dredged material disposal site;

- how dredged material will be contained for de-watering and de-watered if land disposal is contemplated;

- where the water would be discharged following de-watering of land-applied dredged material.

Moreover, it appears that the analysis of the dredged material would be accomplished when it is to be dredged, rather than before dredging. Inasmuch as the existing piers appear to date back at least to 1966, when six finger piers were constructed (EA, page 1-4, section 1.2), we recommend that analysis of sediment to be dredged take place before, rather than during or after, actual dredging. During the intervening years, the sediments under the piers may have accumulated pollutants that should not be disturbed without some analysis and appropriate determinations of permit applicability. Specifically, the sediments should be analyzed using the Consensus-Based Probable Effects Concentrations (MacDonald, et al, 2000) for estuarine sediment analyses. Screening values for these analyses can be found in Virginia's Section 305(b) Report (http://www.deq.state.va.us/wqa/pdf/305b). For future reference, sediment screening values should follow MacDonald et al (2000) Estuarine ER-Ms.

The Virginia Institute of Marine Science points out that restricting consideration of the "affected environment" to the boundaries of the existing marina should be re-examined. At a minimum, Back River, to which the marina basin and hence the dredging and boating activities are connected, should be included. The new paved parking lot

parallels the river for the entire length of the lot. It is likely that non-point source water pollution would also reach the river from the marina.

(b) Permit Applicability. Because the land disturbance is likely to exceed one acre, a Virginia Pollutant Discharge Elimination System (VPDES) Stormwater General Permit for construction activities will be required from DEQ for the project. Similarly, a Virginia Water Protection Permit will be required for two aspects of the project. The direct and indirect impacts to tidal vegetated wetlands which are likely to result from the project may require this permit (see, for example, page 3-15 of the EA, "Environmental Consequences: Proposed Action" headings). In addition, in the event of upland disposal of dredged materials from maintenance dredging at a non-permitted site, a Virginia Water Protection Permit will be required.

Samples of dredged material, and appropriate reporting on the sampling, should be provided to the Army Corps of Engineers and to DEQ's Tidewater Regional Office for their determination regarding applicability of permit requirements to this part of the project.

See "Regulatory and Coordination Needs," item 2, below.

(c) Project Planning. If petroleum products are to be sold at the marina, the Virginia Institute of Marine Science asks whether a spill contingency plan will be developed to deal with minor spills and larger accidents.

In the event there is to be upland disposal of dredged material (EA, page ES-4, "Hazardous Materials and Waste" heading), there should be a liner or basin for the activity and the EA should indicate where the water from the de-watering process will be discharged, according to DEQ's Division of Water Quality.

(d) Marine Environment Protection. The Virginia Institute of Marine Science (VIMS, or "the Institute") asks whether the Air Force will develop a user education program to inform marina users of the importance of protecting the marine environment and facilitating that protection. In addition, VIMS recommends that the Air Force contact the Institute to find out about the "Clean Marina Program." That Program, funded by DEQ's coastal management grant and housed at the Institute, offers recommendations for management of marinas in the tidal areas of the Commonwealth. See "Regulatory and Coordination Needs," item 8, below.

4. Solid and Hazardous Waste Management.

(a) General. The Draft EA addressed hazardous waste issues to some extent, but did not include a search of waste-related data bases. DEQ's Waste Division performed a

cursory review of its data files and determined that the Air Force Base is all of the following:

- a Federal Facility (VA2800005033),
- a Formerly Used Defense Site (VA9799F1590), and
- a Resource Conservation and Recovery Act (RCRA) small-quantity generator of hazardous waste (VAD988222527).

The following web sites may be helpful to the Air Force in locating additional information relating to the above identification numbers:

- http://www.epa.gov/echo/search_by_permit.html and
- http://www.epa.gov/enviro/html.rcris_query_java.html.

(b) National Priorities List: Environmental Restoration Program Sites. The Air Force Base is on the National Priorities List, according to DEQ's Federal Facilities Restoration Program. The marina property lies on, or adjacent to, three Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Environmental Restoration Sites: SS-61, SS-63, and OT-64. Some details:

- Site SS-61 is located at the marina and has two Areas of Concern. One of these is the former Civil Engineering Paint Shop, where paints, paint thinners, paint mixing, and cleansing of paint equipment took place between 1950 and 1991. The other is the gasoline storage tank for the marina fueling pier.
- Site SS-63 is the Back River sediment along the Base shoreline that was found to contain PCBs and PCTs at levels that were of ecological concern.
- Site OT-64 is the groundwater beneath all CERCLA ERP sites, including Site SS-61, on the Base.

Sites SS-63 and OT-64 are still under study by the Langley Tier 1 Partnership. Site SS-61 has a remedy in place as outlined in the Record of Decision for the Site dated August 1999, and signed by the EPA on September 27, 1999. The selected remedy is protective of human health and the environment, and includes the following institutional controls:

1) Land use restrictions to prevent non-industrial use of the property, with the exception of non-residential waterfront development plans as discussed in

Section VI of this Record of Decision, and to maintain the integrity of the current asphalt parking lot.

2) Prohibition of the use of groundwater for purposes other than monitoring.

(c) Analysis and Recommendations. Removal or penetration of the asphalt parking lot may be viewed as an infringement upon the institutional control identified in the SS-61 Record of Decision (#1 above). Contaminated groundwater (OT-64) and sediment (SS-63) remain beneath and adjacent to the marina. Sediment containing PCBs and PCTs may have migrated into the marina piers during Hurricane Isabel (September 2003). Accordingly, before performing any work in the sediments adjacent to the marina, the Air Force should collect samples of the sediment to ensure that neither PCB nor PCT contamination did not migrate into the marina area during the hurricane. See "Regulatory and Coordination Needs," item 2, below.

(d) Demolition and Removal of Structures. See "Regulatory and Coordination Needs," items 3(a) and 3(b).

(e) Characterization of Wastes. According to DEQ's Tidewater Regional Office, all solid wastes must be characterized prior to disposal. This applies to construction and demolition debris generated by the project. As mentioned above (item 3(b)), a Virginia Water Protection Permit is required for upland disposal of dredged material at a non-permitted site.

(f) Pollution Prevention. DEQ encourages the Air Force to implement pollution prevention principles in connection with this project and other projects. These principles include the reduction of waste materials at the source, re-use of materials, and recycling of waste materials. See also item 8, below.

5. Historic Structures and Archaeological Resources. The Department of Historic Resources expects that the Air Force will consult directly with that Department (the State Historic Preservation Office) pursuant to section 106 of the National Historic Preservation Act. See "Regulatory and Coordination Needs," item 5, below.

6. Erosion and Sediment Control; Stormwater Management. Federal agencies and their authorized agents conducting regulated land-disturbing activities on public and private lands in the Commonwealth of Virginia must comply with the Virginia Erosion and Sediment Control Law, the Virginia Stormwater Management Law, and other applicable federal non-point source pollution control mandates such as section 313 of the Clean Water Act and the federal consistency requirements of the Coastal Zone Management Act. Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land

conversion activities that disturb 10,000 square feet or more (2,500 square feet or more in Chesapeake Bay Preservation Areas; see "Federal Consistency...," item 6, below) are regulated by the Erosion and Sediment Control Law and its implementing regulations. Similar activities that disturb one acre or more are regulated by the Stormwater Management Law and its implementing regulations. Accordingly, the Air Force should prepare and implement Erosion and Sediment Control Plans and Stormwater Management Plans that comply with state law. The Air Force is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliance, and/or other mechanisms consistent with Air Force policy. See "Regulatory and Coordination Needs," item 4, below.

The Virginia Institute of Marine Science recommends that other Best Management Practices, besides the reduction in impermeable surface area, be considered. These might include the following:

detention ponds
sumps for wash-down areas
grassed swales.

7. Wildlife Resources. The Department of Game and Inland Fisheries, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects. The Department (hereinafter "DGIF") is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 et seq.), and provides environmental analysis of projects or permit applications coordinated through the Department of Environmental Quality and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts.

DGIF does not anticipate significant adverse impacts upon wildlife resources under that Department's jurisdiction to result from this project. However, DGIF recommends strict adherence to erosion and sediment control measures (see item 6, above), including the use of cofferdams or turbidity curtains for all in-water activities.

8.Chesapeake Bay Preservation Areas/Coastal Lands Management. The implementation of the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10 et seq.) in Hampton allows only re-development, water-dependent, and specifically exempted activities within a 100-foot buffer along sensitive resource areas such as tidal shores, tidal wetlands, and non-tidal wetlands along perennial streams and tidal wetlands. Activities seaward of the shoreline are not subject to the Regulations.

Other, less restrictive requirements apply to development within an additional 100-foot area adjacent to and landward of the more sensitive areas mentioned above. One of the key criteria for development in these areas is the requirement to treat stormwater runoff. Because the project is largely re-development, the Regulations require a 10% reduction in pollutant loads. However, given that not all of the proposed project components are located within the aforementioned buffer zones and that the post-construction condition will have much less impervious area than the pre-construction condition, the stormwater Best Management Practices (BMP) requirement may be less than that normally required. The Air Force should follow the calculation procedures contained in Appendix 5D of the *Virginia Stormwater Management Handbook* (see "Regulatory and Coordination Needs," item 4, below) to determine the required level of treatment and whether a BMP is required.

9. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source. We have several pollution prevention recommendations that may be helpful in carrying out this project:

- Consider development of an Environmental Management System (EMS). An effective EMS will ensure that the facility is committed to minimizing its environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitments to the environment (such as an EMS) when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.
- Integrate pollution prevention techniques into facility maintenance and operation, to include the following: inventory control (record-keeping and centralized storage for hazardous materials), product substitution (use of

non-toxic cleaners), and source reduction (fixing leaks, energy-efficient HVAC and equipment). Maintenance facilities should be designed with sufficient and suitable space to allow for effective inventory control and preventive maintenance.

DEQ's Office of Pollution Prevention provides free information and technical assistance relating to pollution prevention techniques and EMS. If interested, the Air Force may contact that Office (Tom Griffin, telephone (804) 698-4545).

10. Transportation. According to the Department of Transportation (VDOT), the project appears unlikely to give rise to negative effects on the transportation system. While the wet slips will be increased by 3, the dry slips will be decreased by 19, and no increase in traffic appears likely. The project is unlikely to affect existing or future transportation, because it is internal to the Air Force Base.

Armistead Avenue, a local primary street, is currently under construction and will be further improved in the 2006 Regional Transportation Plan. These projects will not directly affect the project on the Air Force Base, and VDOT has no objection to the project.

11. Local and Regional Comments. The Hampton Roads Planning District Commission indicates, after consultation with the Cities of Hampton and Poquoson, that this project is consistent with local and regional plans and policies.

Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the Virginia Coastal Resources Management Program (VCP). The VCP consists of a network of programs administered by several agencies. The DEQ coordinates the review of federal consistency determinations with agencies administering the Enforceable and Advisory Policies of the VCP (first enclosure). Based on the information submitted (Draft EA, pages 3-22 through 3-28, section 3.7) and the comments of reviewing agencies, we concur that the proposed activity is consistent with the Virginia Coastal Resources Management Program, provided that the Air Force and its contractors comply with all applicable requirements.

Public notice of this review was posted on DEQ's web site from June 16, 2004 through June 28, 2004. No comments were received.

Regulatory and Coordination Needs

1. Air Quality Regulation. Open burning of debris may require an open burning permit from DEQ. Similarly, construction and operation of fuel-burning equipment may require new source review permitting from DEQ. Questions regarding applicability and fulfillment of these permitting requirements should be addressed to DEQ's Tidewater Regional Office (Jane Workman, Air Permits Manager, telephone (757) 518-2112).

2. Water Quality Regulation. For coverage by a VPDES Stormwater General Permit for Construction Activities, the Air Force should apply to DEQ's Tidewater Regional Office (below).

Similarly, to obtain the Virginia Water Protection Permit that is required for impacts of the project upon tidal vegetated wetlands and upland disposal of dredged material, the Air Force must fill out a Joint Federal-State Permit Application (JPA) and submit it to the Marine Resources Commission (2400 Washington Street, Newport News, 23607) for permit processing review by that Commission, DEQ's Tidewater Regional Office, and the Army Corps of Engineers (Norfolk District, Regulatory Branch). The JPA should clearly and fully describe the proposed activities.

As indicated above ("Environmental Impacts and Mitigation," item 3(b)), samples of dredged material, and appropriate reporting on the sampling, should be provided to the Army Corps of Engineers (Fort Norfolk, 803 Front Street, Norfolk, 23510, attn: Regulatory Branch) and to DEQ's Tidewater Regional Office (5636 Southern Boulevard, Virginia Beach, 23462) so that determinations can be made regarding applicability of permit requirements to the dredging aspect of the project.

Questions on the Virginia Water Protection Permit may be addressed to DEQ's Tidewater Regional Office (Harold Winer, telephone (757) 518-2153 or Bert Parolari, telephone (757) 518-2166). Questions on the Stormwater General Permit may be addressed to the same Office (Harold Winer, as above, or Jim McConathy, telephone (757) 518-2165). Information Questions on JPA application and processing may be directed to the Marine Resources Commission (Tony Watkinson, Assistant Chief, Habitat Management, telephone (757) 247-2200).

3. Solid and Hazardous Waste Management. Any soil suspected of contamination, or wastes that are generated, must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations. These include, but are not limited to, the Virginia Waste Management Act (*Virginia Code* sections 10.1-1400 et seq.), the Virginia Hazardous Waste Management Regulations (9 VAC 20-60), and the Virginia Solid Waste Management Regulations (9 VAC 20-80); see the enclosed

comments of DEQ's Waste Division (DEQ memo, Brockman to Ellis, dated June 22, 2004) for additional details.

The EA stated that asbestos-containing materials (ACM) and lead-based paint might be present in old piping that is to be removed, according to DEQ's Division of Waste Management. We offer guidance on these matters in sub-items (a) and (b).

(a) Asbestos Abatement. The owner or operator of a demolition or renovation project must inspect the affected part of the facility thoroughly, prior to the commencement of the demolition or renovation, for the presence of asbestos, including Category I and Category II non-friable ACM. Upon classification as friable or non-friable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 et seq.) The Air Force may contact the DEQ Waste Management Program (telephone (804) 698-4021) and the Department of Labor and Industry (Dr. Clarence Wheeling, telephone (804) 786-0574) for additional information.

(b) Lead-Based Paint. The proposed project must comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations (9 VAC 20-60-261). For additional information regarding these requirements, the Air Force may contact the Department of Professional and Occupational Regulation (Thomas Perry, telephone (804) 367-8595).

(c) CERCLA Obligations. DEQ's Federal Facilities Restoration Program recommends that the Air Force contact the Langley Air Force Base Environmental Restoration office (John Tice, telephone (757) 764-1086) for information concerning the Air Force's CERCLA obligations at the project site before initiating any activities disturbing the land, sediment, or groundwater.

4. Erosion and Sediment Control Plan; Stormwater Management Plan. The Department of Conservation and Recreation encourages the Air Force to contact the Department of Conservation and Recreation's Chowan, Albemarle, and Coastal Watersheds Office (Art Kirkby, telephone (757) 925-2468) to obtain plan development or implementation assistance so as to ensure project compliance with the Erosion and Sediment Control Law (*Virginia Code* section 10.1-567) and, if necessary, the Stormwater Management Law (*Virginia Code* section 10.1-603.15). In addition, we recommend that the Air Force discuss these matters with the Cities of Hampton (Brian Ballard, Planning Department, telephone (757) 728-5238) and Poquoson (Joseph Hollingsworth, Planning Director, telephone (757) 868-3501), as appropriate.

Copies of the *Stormwater Management Handbook* may be obtained through the Department of Conservation and Recreation's Chowan, Albemarle, and Coastal Watersheds Office mentioned above.

5. Historic Structures and Archaeological Resources. As indicated above ("Environmental Impacts and Mitigation," item 5), the Air Force should consult directly with the Department of Historic Resources (Marc Holma, telephone (804) 367-2323, extension 114) to ensure compliance with the National Historic Preservation Act, section 106 and with its implementing regulations at 36 CFR Part 800.

6. Subaqueous Lands Encroachment. As indicated above, encroachment on state-owned subaqueous lands may require a permit from the Marine Resources Commission. The Air Force should contact the Commission (Tony Watkinson, telephone (757) 247-2200) to obtain the Joint Permit Application and to determine the applicability of this permit requirement.

7. Transportation Coordination. VDOT recommends that the Air Force consult with VDOT's Williamsburg Residency (telephone (757) 253-4832) to ensure that no conflicts are created due to current VDOT requirements on geometric design standards, pavement marking, pavement design, transition lengths, work zone safety, and sight distance.

8. Coastal Lands Management. To ensure consistency with the Coastal Lands Management enforceable policy of the Virginia Coastal Resources Management Program, the Air Force should contact the Chesapeake Bay Local Assistance Department (Catherine Harold, telephone (804) 371-7501).

9. Clean Marinas Program. For information on this program, which is intended to facilitate improved environmental management of marinas in tidal areas, the Air Force may contact the Virginia Institute of Marine Science (telephone (804) 684-7768).

Thank you for the opportunity to comment on this project.

Sincerely,

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures
cc: (next page)

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4469 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

Charles H. Ellis III

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

We find this project to be consistent with Virginia's approved coastal management program. We do not anticipate significant adverse impacts upon wildlife resources under our jurisdiction to result from this project. We recommend strict adherence to erosion & sediment control measures, including the use of cofferdams or turbidity curtains for all in-water activities.

Thank you.

(signed) Raymond T Fernald (date) 6/18/04

(title) Environmental Manager

(agency) Department of Game and Inland Fisheries

PROJECT # 04-103F

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
TDD (804) 786-2121

RECEIVED
JUL 01 2004
DEQ-Office of Environmental Impact Review

MEMORANDUM

Date: 28 June 2004

To: Charles H. Ellis, III, Virginia Department of Environmental Quality

From: John R. Davy, Director, Planning & Recreation Resources

Subject: DEQ#04-103F: Marina Repair, Langley Air Force Base

The Department of Conservation and Recreation (DCR) functions to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest.

DCR has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Biotics documents the presence of natural heritage resources in the project vicinity. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

The Virginia Department of Agriculture and Consumer Services (VDACS), which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state- listed plant and insect species. The current activity will not affect any state-listed threatened or endangered plants or insects.

New and updated information is continually added to Biotics, please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

Please note that federal agencies and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R), and other applicable federal nonpoint source pollution mandates (e..g, Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion activities that disturb 2,500 square feet or more would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. Accordingly, the sponsoring federal agency should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The sponsoring federal agency is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms consistent with agency policy. The Department of Defense/Air Force is highly encouraged to contact DCR's Chowan, Albemarle & Coastal Watersheds Office and/or the local ESC and SWM authorities to obtain plan development, implementation assistance and to ensure project conformance during and after active construction. *[Reference: VESCL §10.1-567; VSWML §10.1-603.15]*

For your records, no state scenic resources, state recreation facilities or state natural area preserves under DCR's jurisdiction will be impacted by this project.

Finally, the marina at Langley Air Force Base should give consideration to participating in the Virginia Clean Marina Program. The aim of the Clean Marina Program is to provide information, guidance and technical assistance to marinas on minimizing their impacts to water quality and coastal resources. For more information on this program, please visit the Clean Marina Program websites at http://www.deq.state.va.us/vacleanmarina/ and http://www.vims.edu/adv/vamarina.

Thank you for the opportunity to offer comments.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

MEMORANDUM

TO: Charles H. Ellis, III, Environmental Program Planner

FROM: ARB Allen Brockman, Waste Division Environmental Review Coordinator

DATE: June 22, 2004

COPIES: Sanjay Thirumagari, Waste Division Environmental Review Manager; Paul Herman, file

SUBJECT: Environmental Assessment
DOD/Air Force—Langley Air Force Base, Marina Repair, DEQ Project #04-103F

The Waste Division has completed its review of the Environmental Impact report for repair of the marina at Langley Air Force Base, Hampton, Virginia. We have the following comments concerning the waste issues associated with this project:

Hazardous waste issues were addressed to some extent in the report. However, the report did not include a search of waste-related data bases and solid waste issues were not addressed. The Waste Division staff performed a cursory review of its data files and determined that the facility is a Federal Facility (VA2800005033), a Formerly Used Defense Site (VA9799F1590), and a RCRA small quantity generator of hazardous waste (VAD988222527). The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/echo/search_by_permit.html or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html . Paul Herman of the Federal Facility staff in the Waste Division was contacted for his review of this assessment and he has provided the memo dated June 21, 2004, attached.

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained

in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Parts 107.

Also, any structures that may be demolished/renovated/removed should be checked for asbestos-containing materials (ACM) and lead-based paint prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Allen Brockman at (804) 698-4468.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE DIVISION
Federal Facilities Restoration Program
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Environmental Assessment – Langley Air Force Base Marina Repair

TO: Allen Brockman

FROM: Paul E. Herman, P.E., FFR

DATE: June 21, 2004

COPIES: File

The *Draft Langley Air Force Base Marina Repair Environmental Assessment* dated June 2004 has been reviewed as requested by Allen Brockman, Waste Division Environmental Review Manager. The document presents the proposed repair actions and the no-action alternatives.

Langley Air Force Base (LAFB) is on the National Priorities List. The marina property lies on, or is adjacent to, three CERCLA Environmental Restoration Program (ERP) Sites: SS-61, SS-63, and OT-64. Site SS-61 is located at the marina and has two Areas of Concern (AOCs), the former Civil Engineering Paint Shop where paints, paint thinners, paint mixing, and cleansing of painting equipment took place between 1950-1991, and the gasoline storage tank for the marina fueling pier. Site SS-63 is the Back River sediment along the LAFB shoreline that was found to contain PCBs and PCTs at levels that were of ecological concern. And, Site OT-64 is the groundwater beneath all CERCLA ERP Sites, including SS-61, on LAFB.

Sites SS-63 and OT-64 are still under study by the Langley Tier 1 Partnership. Site SS-61 has a remedy in place as outlined in the Record of Decision for the Site dated August 1999 and signed by EPA on September 27, 1999. The selected remedy is protective of human health and the environment and includes the following institutional controls:

1. Land use restrictions to prevent non-industrial use of the property, with the exception of non-residential waterfront development plans as discussed in Section VI of this ROD and to maintain the integrity of the current asphalt parking lot.
2. Groundwater use restrictions to prohibit the use of groundwater for purposes other than monitoring.

Removal or penetration of the asphalt parking lot may be viewed as an infringement upon the institutional control identified in the SS-61 ROD (#1 above). Contaminated ground water (OT-64) and sediment (SS-63) remain beneath and adjacent to the marina. Sediment containing PCBs and PCTs may have migrated into the marina piers during Hurricane Isabel. Prior to performing any work in the sediments adjacent to the marina, samples of the sediment should be collected to ensure PCB/PCT contamination did not migrate into the marina area during the storm. The Federal Facilities Restoration Program recommends the facility contact Mr. John Tice, LAFB Environmental Restoration at (757) 764-1086, for information concerning the CERCLA obligations at the site prior to initiating any land, sediment, or ground water disturbing activities.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Charles H. Ellis III **DEQ - OEIA PROJECT NUMBER: 04 – 103F**

PROJECT TYPE: ☐ STATE EA / EIR / FONSI **X FEDERAL EA / EIS** ☐ SCC

X CONSISTENCY DETERMINATION/CERTIFICATION

RECEIVED
JUN 14 2004
DEQ-Office of Environmental Impact Review

PROJECT TITLE: MARINA REPAIR, LANGLEY AIR FORCE BASE

PROJECT SPONSOR: DEPARTMENT OF DEFENSE / AIR FORCE

PROJECT LOCATION:
- ☐ OZONE NON ATTAINMENT AREA
- X **OZONE MAINTENANCE AREA**
- X **STATE VOLATILE ORGANIC COMPOUNDS & NITROGEN OXIDES EMISSION CONTROL AREA**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO:
- X **CONSTRUCTION**
- ☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. X **9 VAC 5-40-5600 et seq. – Open Burning**
5. X **9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

Being in an area of ozone maintenance, all precautions are to be taken to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx).

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: June 10, 2004

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
Larry G. Lawson, P.E., Director

TO: Charles E. Ellis III
Office of Environmental Impact Review

FROM: Michelle Henicheck
For: Ellen Gilinsky, Ph.D., PWS
Office of Wetlands and Water Protection and Compliance

DATE: June 28, 2004

SUBJECT: Environmental Assessment (EA)
Marina Repair, Langley Air Force Base
04-103F

We have reviewed the information provided concerning the above-referenced project. The purpose of the project is to repair and reconstruct the marina facility. The proposed activity includes constructing a marina building and demolishing the existing one, replacing with an asphalt parking lot. The existing dry slips would be consolidated and relocated next to the marina building. A new steel picket fence would be constructed to enclose the marina building and dry slip area. Bulkhead repair would be conducted and the wet slips would be repaired. Maintenance dredging would occur within the wet slip area to remove silt accumulated during the hurricane.

According to the report (Section 4.0, Summary of Environmental Consequences, Hazardous Materials and Waste), dredge material would be analyzed and depending on the chemical characteristics would be disposed in local, permitted, and approved sites that accept this type of debris. The report does not state the location of the dredge spoil site, description of how the dredge material will be contained for dewatering, how the dredge material will be dewatered and treated should the material contain contaminants, and where the dewater will be discharged.

Should water quality data be conducted prior to dredging, then sediments should be analyzed using the Consensus Based Probable Effects Concentrations (MacDonald et al. 2000) for estuarine sediment analyses. Screening values for estuarine sediment analyses can be found in Virginia's 305b Report (http://www.deq.state.va.us/wqa/pdf/305b). For future reference, sediment screening values should follow MacDonald et al. (2000) Estuarine ER-Ms.

According to the report, there are no wetlands or submerged aquatic vegetation (SAV) beds in the project vicinity. The report concludes, and we concur, that this project will not adversely affect wetland or groundwater resources.

(over)

In addition to water quality concerns, we recommend strict adherence to erosion and stormwater management practices during land application of dredge material, if applicable, and further encourage the project proponent to monitor construction activities to make certain that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands. Should the size or scope of the project change, additional review may be necessary. A VPDES stormwater general permit for construction activities will be required should the project disturb one or more acres of land.

Ellis,Charles

From: Winer,Harold
Sent: Thursday, June 24, 2004 11:00 AM
To: Ellis,Charles
Cc: McConathy,James; Cash-Robertson,William; Johnston,Milton; Parolari,Bert; Madigan,Thomas
Subject: EIR #04-103F, Langley Air Force Base Marina Repair

As requested, TRO staff have reviewed the supplied information and have the following comments:

Regarding Water Permitting issues, it is difficult to determine from the document exactly how much area of soil will be exposed as a result of demolition and construction activities associated with this project. However, we believe it is clear and so stated in the document that more an one acre of soil will be exposed and/or disturbed as a result of the construction activity associated with the marina refurbishment. Therefore, a general permit to regulate the run off of storm water associated with construction activity will be required for the marina project work.

Concerning Waste, the Virginia Hazardous Waste Management Regulations require that all solid wastes be characterized prior to disposal. Therefore, all construction and demolition debris must be properly characterized prior to disposal at a solid waste landfill. Additionally, the DEQ VWP program must authorize upland dispsoal of the dredge spoils generated from maintenance dredging at a non-permittted site. If it is anticipated that the maintenance dredging spoils will be dispossed at a permitted landfill, the spoils must be dewatered and characterized.

Regarding VWP issues, we have reviewed the supplied information from a VWPP perspective and reiterate the general comment provided in Harold Winer's May 13, 2004 response to Mr. Kenneth Walker. This project will clearly impact state waters as a result of dredging and other related construction activities. Direct and/or indirect impacts to tidal vegetated wetlands are also proposed. As such, a completed Joint Permit Application should be submitted which fully and clearly describes the proposed activity. Provided that a VWP permit or other written authorization is obtained and complied with, this activity will be consistent with CZM requirements from a VWPP perspective.

Regarding our Tank program, Langley currently operates 14 regulated USTs and 53 regulated ASTs. Langley also has a current ODCP # 05-5136. The existing fuel tank located at the marina main building is included with the 53 active ASTs and is subject to the AST Regulation 9 VAC 25-91-10 *et seq,* including all ODCP requirements. Any upgrade / relocation / closure of this tank must be coordinated through the DEQ Tidewater Regional Office AST Program Section (Attn: Tom Madigan). Additionally, any installation of new ASTs and/or USTs must be coordinated through the same section.

Finally regarding Air Compliance, we have reviewed this draft EA and concur with the proponent's Finding of No Significant Impact, contingent on implementation of the project as described.

Thanks for the opportunity to comment.

Harold J. Winer
Deputy Regional Director
DEQ, Tidewater Regional Office
Phone - 757-518-2153 Fax - 757-518-2003
email - hjwiner@deq.virginia.gov

Ellis,Charles

From: Winer,Harold
Sent: Thursday, June 24, 2004 2:49 PM
To: Ellis,Charles
Subject: RE: EIR #04-103F, Langley Air Force Base Marina Repair

We have some additional comments:

On page 3-21 of the assessment report Environmental Restoration Program (ERP) site activities in the vicinity of the marina are mentioned. There are two ERP sites in the proposed marina construction area, ERP sites 61 and 63. It sounds like LAFB is going through the proper permitting procedures to construct in these cleanup sites but it is recommended that Paul Herman with the Federal Facilities Program review this section of the report if he has not already done so.

Harold J. Winer
Deputy Regional Director
DEQ, Tidewater Regional Office
Phone - 757-518-2153 Fax - 757-518-2003
email - hjwiner@deq.virginia.gov

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, 23219-2000

PHILIP A. SHUCET
COMMISSIONER

EARL T. ROBB
STATE ENVIRONMENTAL ADMINISTRATOR

June 28, 2004

Mr. Charles H. Ellis
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main St., Sixth Floor
Richmond VA 23219

Re: Project #04-103F, Marina Repair, Langley Air Force Base

Dear Mr. Ellis:

Mr. Eric Stringfield, of the Virginia Department of Transportation has reviewed the information provided for the referenced project. His review covers impacts to existing and proposed transportation facilities.

Preliminary review of the submitted study along with existing conditions and planned improvements do not indicate any negative impacts to the transportation system. The report indicates that although the wet slips will be increased by 3, the dry slips will be decrease by 19, with no increase in traffic generated. Armistead Ave., a local primary, is currently under improvement construction and will be further improve in 2006 Regional Transportation Plan. These projects will not directly affect the Air Base's project.

This is an internal project and does not note any coordination with VDOT. The improvement should not adversely impact the existing or future transportation system, however, careful consideration and coordination with the Williamsburg Residency is required to ensure that no conflicts are created due to current VDOT requirements regarding geometric design standards, pavement marking, pavement design, transition lengths, work zone safety and sight distance. Otherwise this office has no objections to the planned improvements.

All work with the potential to effect roadways or other transportation facilities should be coordinated with VDOT's Williamsburg Residency (757) 253-4832.

Project #04-103F, Marina Repair, Langley Air Force Base

Thank you for the opportunity to comment on this project.

Sincerely,

A. C. Ray
Environmental Specialist II
VDOT
1401 East Broad St.
Richmond, VA 23219
804-371-6823 - O
804-786-7401 - FAX

COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.state.va.us

June 25, 2004

Mr. Charles H. Ellis, III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: Marina Repair
Langley Air Force Base, Virginia
DHR File No. 2004-0709

Dear Mr. Ellis:

We have received your request for our review and comment regarding the above referenced project. It is our understanding that the Air Force proposes to repair the marina facility located on the Langley Air Force Base in Hampton, Virginia. The repairs include relocation of a new marina building and demolition of existing Building 615, consolidation and relocation of existing dry slips, construction of a new picket fence, and repairs to an existing bulkhead.

As this is a federal project, we anticipate the Air Force consulting directly with the Department of Historic Resources (DHR) pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR 800. We request that the Department of Environmental Quality (DEQ) condition its approval of this project on the applicant successfully completing the Section 106 process.

If you have any questions about our comments, please call me at (804) 367-2323, Ext. 114.

Sincerely,

Marc Holma, Architectural Historian
Office of Compliance and Review

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

RECEIVED

JUN 24 2004

DEQ-Office of Environmental Impact Review

Charles H. Ellis III

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

NO COMMENTS.

(signed) [signature] (date) 6/23/04

(title) GEOLOGIST

(agency) DMME

PROJECT # 04-103F 8/98

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

Charles H. Ellis III
CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Please find attached my preliminary comments provided to Langley on May 20th but apparently too late to be included in the review document. I believe the comments remain relevant and as such are submitted as review. I will be pleased to respond to any questions.

(signed) IM Barnard (date) 6/28/04

(title) Assistant Professor

(agency) VIMS-CCRM

PROJECT # 04-103F 8/98

WILLIAM & MARY VIMS

Virginia Institute of Marine Science
School of Marine Science

CCRM
Center for
Coastal Resources Management

May 20,2004

Mr. Thomas Whittkamp
1 CES/CEVQ
37 Sweeney Boulevard
Langley AFB, VA 23665

RE: Proposed Marina Repair at Langley Air Force Base (LAFB), VA

Dear Sir,

As requested in Mr. Kenneth Walker's letter of April 28, I am providing some preliminary observations for your perusal in preparing the Environmental Assessment (EA) for the subject repair activity. My preliminary comments are as follows:

1) Restricting the "affected environment" to the boundaries of the existing marina should be reexamined. At a minimum, Back River, to which the marina basin and therefore the dredging and boating activities are connected, should be included. Non-point source pollution would also presumably be reaching the river from the marina, as well as unavoidable pollutants contributed during normal marina operations.

2) Are other Best Management Practices (BMP's) in addition to the reduction in impermeable surface area being considered? This would be the time for inclusion of such non-point source controls as detention ponds, sumps for wash-down areas, grassed swales, etc., if deemed necessary. I note that the new paved parking lot parallels the river for its entire length and across one end.

3) Will petroleum be sold at the marina? If so, is a spill contingency plan being developed to deal with both minor spills and larger accidents?

4) Are there plans to develop a user education program that would, through signage, litter control, classes, etc., inform the marina users of the importance of protecting the marine environment as well as making it easier for them to do so?

Finally, I would suggest that you contact the Department of Environmental Quality-funded "Clean Marina Program", housed here at the Institute, for additional details and recommendations for management of marinas in the tidal areas of Virginia (804-684-7768).

I hope you find these comments helpful in the development of your EA.

Sincerely,

Thomas A. Barnard, Jr.
Assistant Professor

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

July 6, 2004

Mr. Charles H. Ellis, III, Environmental Program Planner
DEQ Office of Environmental Impact Review
629 East Main Street, 6th Floor
Richmond, Virginia 23219

RE: Marina Repair, Langley Air force Base
DCBLA Project Review No. FSPR-USAF-01-04

Dear Mr. Ellis:

As you requested, we have reviewed the Environmental Assessment for the proposed repairs at the Langley Air Force Base Marina. We previously commented on components of the proposed work (prior to the hurricane damage). Implementation of the Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations) in Hampton only allows redevelopment, water-dependent and specifically exempted activities within a 100-foot buffer along sensitive resource areas such as tidal shores, tidal wetlands and nontidal wetlands along perennial streams and tidal wetlands. Activities seaward of the shoreline are not subject to the requirements of the Regulations. Other performance criteria (but less restrictive) apply to development within an additional 100-foot area adjacent to and landward of the more sensitive aforementioned areas. One of the key criteria for development in these areas is the requirement to treat stormwater runoff. Because the project is largely redevelopment, the Regulations require a 10% reduction in pollutant loads. However, given that not all of the proposed improvements are located within the aforementioned buffer zones and that the post-construction condition will have much less impervious area than the pre-construction condition, it is possible that the stormwater BMP requirement may be less than what would normally be required. The calculation procedures contained in Appendix 5D of the Virginia Stormwater Management Handbook should be followed to determine whether or not a BMP is required and the level of treatment that may be required.

We appreciate the opportunity to comment on this project. Please do not hesitate to contact us at 1-800-CHESBAY should you have any questions.

Sincerely,

Catherine M. Harold
Environmental Engineering Manager

Brad Belo
Senior Planner

HAMPTON ROADS
PLANNING DISTRICT COMMISSION

LOUIS R. JONES, CHAIRMAN • JEANNE ZEIDLER, VICE CHAIR • JAMES O. MCREYNOLDS, TREASURER
ARTHUR L. COLLINS, EXECUTIVE DIRECTOR/SECRETARY

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Debbie Ritter, *Council Member*
William E. Ward, *Mayor*

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Rowland L. Taylor, *City Manager*

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John J. Adams, Sr., *Board Member*
William H. Whitley, *County Administrator*

HAMPTON
George E. Wallace, *City Manager*
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Vacancy

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W. Douglas Caskey, *County Administrator*
Stan D. Clark, *Chairman*

JAMES CITY COUNTY
Bruce C. Goodson, *Vice Chairman*
Sanford B. Wanner, *County Administrator*

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Charles C. Allen, *Vice Mayor*
Joe S. Frank, *Mayor*
Edgar E. Maroney, *City Manager*

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Donald L. Williams, *Council Member*
Regina V.K. Williams, *City Manager*
Barclay C. Winn, *Council Member*
W. Randy Wright, *Council Member*

POQUOSON
Charles W. Burgess, Jr., *City Manager*
Gordon C. Helsel, Jr., *Mayor*

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J. Thomas Benn, III, *Council Member*
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R. Steven Herbert, *City Manager*

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Harry E. Diezel, *Council Member*
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Meyera E. Oberndorf, *Mayor*
Peter W. Schmidt, *Council Member*
James K. Spore, *City Manager*
James L. Wood, *Council Member*

WILLIAMSBURG
Jackson C. Tuttle, II, *City Manager*
Jeanne Zeidler, *Mayor*

YORK COUNTY
James O. McReynolds, *County Administrator*
Thomas G. Shepperd Jr., *Vice Chairman*

June 29, 2004

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DEQ-Office of Environmental Impact Review

Mr. Charles H. Ellis III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: Marina Repair, Langley Air Force Base
DEQ #04-103F (ENV:GEN)

Dear Mr. Ellis:

Pursuant to your request of June 9, 2004, the staff of the Hampton Roads Planning District Commission has reviewed the Environmental Assessment for the proposed repair and reconstruction of the Langley Marina Facility. We have contacted the Cities of Hampton and Poquoson regarding the project.

Based on this review, it appears that the proposal is consistent with local and regional plans and policies.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

Arthur L. Collins
Executive Director/Secretary

MWL:fh

Copies: Mr. Brian Ballard, HA
Mr. Joseph W. Hollingsworth, PQ

CEV KW

COMMONWEALTH of VIRGINIA

Department of Health

ROBERT B. STROUBE, M.D., M.P.H.
STATE HEALTH COMMISSIONER

P O BOX 2448
RICHMOND, VA 23218

TTY 7-1-1 OR
1-800-828-1120

June 25, 2004

SUBJECT: Langley Air Force Base
Proposed Marina Repair

Kenneth H. Walker
1 CES/CEVQ
37 Sweeney Boulevard
Langley AFB, Virginia 23665

Dear Mr. Walker:

This Department has reviewed the proposed marina repair at Langley Air Force Base, Virginia. This Department has not received an application for sewerage facilities for the project, nor has the applicant submitted documentation for installation of a pump-out and dump station facility. We recommend that the application be modified to demonstrate the location of sanitary facilities, pump-out and dump station facilities.

By copy of this letter, we are advising the other state and federal permitting agencies of our comments on this project.

Sincerely,

Preston K. Smith

Preston K. Smith
Office of Environmental Health Services
(804) 864-7468

cc: Hampton City Health Dept.

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

William A. Pruitt
Commissioner

June3, 2004

Mr. Thomas Whitcamp
1 CES/CEVQ
37 Sweeney Blvd
Langley AFB, VA 23665

Re: Marina Repair

Dear Mr. Whitcamp:

Thank you for the opportunity to offer comments regarding the development of an Environmental Assessment for the repair of the Langley Air Force Base marina that is situated along Back River in Hampton.

Please consider the following when designing and developing the marina facility.

1) Repair and replacement of the bulkhead may require a permit from this agency, depending on a variety of factors such as location and footprint of the structure.

2) Replacement of the pier structures probably will require a permit from this agency. However, staff recommends that you contact Ms. Traycie West at 247-2256 regarding Governor's Executive Orders Number 58 and 66 for replacement of previously authorized structures destroyed by Hurricane Isabel. Replacement of the piers may be authorized under these Executive Orders. Ms. West can provide assistance in determining whether the current proposal meets the requirements set out in the Orders. Executive Orders can be found on the Governor's web page at http://www.governor.virginia.gov/Press_Policy/Executive_Orders/EOHome.html.

3) In searching our records, Langley Air Force Base previously applied to repair the boat ramp under application number VMRC#02-0606. A draft permit was issued, but the document was not signed and returned to VMRC as is required for final permit issuance. As such, the draft permit remains unexecuted.

4) Staff recommends that Langley Air Force Base staff consider the guidelines offered in "The Virginia Clean Marina Guidebook" when designing the replacement marina facility. For more information, please contact Clean Marina Program staff at the Virginia Institute of Marine Science. Bill DePaul at (804) 684-7163 or Peter Hall at (804) 684-7768 can offer assistance, or check http://www.vims.edu/adv/vamarina/.

5) Staff recommends that Langley Air Force Base staff contact Preston Smith at the Virginia Department of Health Bureau of Wastewater Engineering in Richmond for information regarding consistency with Health Department Regulations. Mr. Smith can be reached at (804) 864-7468.

If I can offer further assistance, please contact me at (757) 247-2256.

Thank you,

Traycie L. West
Environmental Engineer

Enclosures
HM
TLW/moj

Cc: Preston Smith – Virginia Department of Health
Bill DePaul – Virginia Institute of Marine Science
Peter Hall - Virginia Institute of Marine Science

APPENDIX B

AIR QUALITY ANALYSIS

DEMOLITION

WETSLIP REMOVAL					
Equipment	**LF**	**Rated HP**	**hrs/day**	**days**	**total hrs**
Barge Mounted Crane	43%	194	6	25	150

Emission Factors g/hp-hr (Ref 1)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
1.26	4.2	10.3	1.44	0.93

Emissions (tons)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
0.02	0.06	0.14	0.02	0.01

DEMOLITION OF EXISTING MARINE FACILTY[1]					
Equipment	**LF**	**Rated HP**	**hrs/day**	**days**	**total hrs**
Hydraulic Excavator	58%	163	6	22	132
Dozer	57.5%	146	6	22	132

Emission Factors g/hp-hr (Ref 1)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
0.7	5.2	10.75	1.44	0.93
1.4	6.8	10.1	1.05	0.85

Emissions (tons)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
0.01	0.07	0.15	0.02	0.01
0.02	0.08	0.12	0.01	0.01

PARTICULATE EMISSIONS FROM BUILDING DEMOLITION	
	ft3 of building
	42,350

Emission Factors lbs/ft3 (Ref 2)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
---	---	---	0.0042	---

Emissions (tons)				
---	---	---	0.09	---

HAULING (ON-HIGHWAY TRUCKS) OF REMOVED MATERIALS [1]					
Equipment			**no of trips**	**avg RT miles**	**total miles**
Heavy-Duty Diesel Trucks			110	30	**3300**

Emission Factors g/veh-mile (Ref 3)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
2.8620	13.2090	29.1780	1.0000	1.0000

Emissions (tons)				
VOC	**CO**	**NO_X**	**PM10**	**SO_X**
0.0104	0.0480	0.1061	0.0036	0.0036

TOTAL	**0.05**	**0.26**	**0.52**	**0.06**	**0.04**

NOTES: 1) Includes both concrete/ashpalt and rip rap.

ASSUMPTIONS: Old Bldg = 4325 sf x 10 ft 42,350 ft3

Assume one week to remove/excavate rip rap
Assume for demolition/removal of asphalt and marina building materials
Assume 2 days for demolition of boat ramp
Assume 5 days for demolition of peninsula asphalt (24,600 square feet)\

DEBRIS HAULING ASSUMPTIONS		total CY	CY/truck	truckloads
Wetslip + Building Removal		---	NA	25
Boat Ramp		---	NA	2
Rip Rap for disposal	200 linear feet, by 10 feet by 3 feet deep	222	20	11
Existing asphalt	41,400 sf, 4 inch deep	511	20	26
Peninsula	24,600 square ft by 6 inch	911	20	46
		TOTAL TRUCK TRIPS		**110**

REFERENCES:

1) US EPA, November 1991, onroad Engine and Emission Vehicle Study Report
2) ACAM Technical Guidance Document
3) ACAM/Mobile 6 with defaults, no I/M program for Heaviest Component of HD Trucks

DREDGING

Equipment	LF	Rated HP	hrs/day	days	total hrs
Clamshell Dredge	75%	2000	6	20	**120**
Transport Tug	70%	1600	---	---	**24**

1 kW =	1.341	hp

Emission Factors lb/hp-hr (Ref 1)

VOC	CO	NO_X	PM10	SO_X
7.05E-04	0.0055	0.024	0.0007	0.0081

Emissions (tons)

VOC	CO	NO_X	PM10	SO_X
0.06	0.50	2.16	0.06	0.73

Emission Factors g/kw-hr (Ref 2)

VOC	CO	NO_X	PM10	SO_X
0.5000	5.0000	16.5000	0.2700	---

Emissions (tons)

VOC	CO	NO_X	PM10	SO_X
0.01	0.11	0.36	0.01	--

TOTAL	0.07	0.61	2.52	0.07	0.73

ASSUMPTIONS:

Average Scow Capacity	4000	CY
Tug Trips to dispose of 24,000 CY of dredged material	6	
Assume 20 nautical miles for scow to disposal site	40	naut miles RT
Average speed	10	knots
Time for each disposal RT	4	
Total Tug time for disposal of 24,000 CY	24	hrs

REFERENCES:

1) AP-42 Compilation of Air Pollutant Emission Factors, Chapter 3,4 Large Stationary Diesel and all Stationary Dual Fuel Engines, October 1996

2) Final Regulatory Impact Analysis: Control of Emissions from Marine Diesel Engines, US EPA, November 1999. Table 3-3 Emissions Data from Baseline Category 2 Marinee Diesel Engines

CONSTRUCTION

Equipment	LF	Rated HP	hrs/day	days	total hrs	Emission Factors g/hp-hr (Ref 1) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
Wetslip Placement															
Barge Mounted Pile Driver	62%	325	6	40	240	1.41	9.2	11.01	1.44	0.93	0.08	0.49	0.59	0.08	0.05
Crane	43%	194	6	40	240	1.26	4.2	10.3	1.44	0.93	0.03	0.09	0.23	0.03	0.02

	LF	Rated HP	hrs/day	days	total hrs	Emission Factors g/hp-hr (Ref 1) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
Sheet Pile Bulkhead Placement															
Barge Mounted Pile Driver ((90 Ton Driving Force)	62%	325	6	15	90	1.41	9.2	11.01	1.44	0.93	0.03	0.18	0.22	0.03	0.02
Crane	43%	194	6	15	90	1.26	4.2	10.3	1.44	0.93	0.01	0.03	0.09	0.01	0.01

		Acreage	% distubed per day	days	Emission Factors lbs/acre-day (Ref 2) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
SIte Grading[1]														
Fugitive Dust Emissions		1	50%	5	---	---	---	60.700	---				0.08	

	LF	Rated HP	hrs/day	days	total hrs	Emission Factors g/hp-hr (Ref 1) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
Marine Building, Parking and Peninsula															
Grader	57.5%	160	2	5	10	1.54	3.8	9.6	1	0.87	0.002	0.004	0.010	0.001	0.001
Wheeled Loader	54%	167	2	5	10	0.84	4.8	10.3	1.29	0.86	0.001	0.005	0.010	0.001	0.001
Tracked Loader	47%	146	2	5	10	1.4	6.8	10.1	1.05	0.85	0.001	0.005	0.008	0.001	0.001
Dump Trucks	38%	260	4	60	240	0.84	2.8	9.6	0.8	0.89	0.022	0.073	0.251	0.021	0.023
Forklifts	48%	89	6	60	360	1.68	10	8	1.6	0.93	0.028	0.168	0.134	0.027	0.016
Asphalt Paver	59%	104	6	2	12	0.6	3.2	10.3	0.9	0.93	0.000	0.003	0.008	0.001	0.001
Roller	57.5%	99	6	2	12	0.8	3.1	9.3	0.78	1	0.001	0.002	0.007	0.001	0.001
Dryslip Construction															
Asphalt Paver	59%	104	6	3	18	0.6	3.2	10.3	0.9	0.93	0.001	0.004	0.013	0.001	0.001
Roller	57.5%	99	6	3	18	0.8	3.1	9.3	0.78	1	0.001	0.003	0.010	0.001	0.001
Rip Rap Placement															
Loader/Dozer	47%	146	6	5	30	1.4	6.8	10.1	1.05	0.85	0.00	0.02	0.02	0.00	0.00

	building construction square ft	days	Emission Factors lbs/day/1000 sq ft (Ref 2) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
Stationary Gasoline Equipment	6400	90	0.198	5.29	0.137	0.004	0.007	0.06	1.52	0.04	0.00	0.00

HAULING (ON-HIGHWAY TRUCKS) OF DELIVERED MATERIALS [1] Equipment	no of trips	avg RTmiles	total miles	Emission Factors grams/veh-mile (Ref 3) VOC	CO	NO_X	PM10	SO_X	Emissions (tons) VOC	CO	NO_X	PM10	SO_X
Heavy-Duty Diesel Trucks	144	30	**4320**	2.8620	13.2090	29.1780	1.0000	1.0000	0.0136	0.0629	0.1389	0.0048	0.0048

	VOC	CO	NO_X	PM10	SO_X
TOTAL	**0.27**	**2.67**	**1.77**	**0.29**	**0.15**

NOTES:

1) Includes Marina Buildings, Parking and Dryslip
Only Area Graded is the Peninsula Area, Other areas are simply paved

ASSUMPTIONS:

MATERIAL DELIVERY ASSUMPTIONS	total CY	CY/truck	truckloads
Fence 970 ft (posts every 6 ft) = 162 posts + Fencing	---	NA	2
Bulkhead 990 ft (assume 40 ft lengths, 10 per truck)	---	NA	2
Wetslip Construction/Pilings	---	NA	25
Marina Building - Materials	---	NA	10
Fill for marina bldg (6600 sq ft x 2 ft deep)	489	20	24
Fill for bulkhead (990 ft x 4 ft x 1ft)	147	20	7
Sidewalk 5490 square ft by 6 in deep	102	20	5
Parking Lot/Dry Slip 75,000 square ft by 6 in deep	1389	20	69
Rip Rap (700 ft x 10 ft x 5 ft)	1296	20	65
	TOTAL TRUCK TRIPS		**144**

REFERENCES:

1) US EPA, November 1991, onroad Engine and Emission Vehicle Study Report
2) ACAM TechnicalGuidance Document
3) ACAM/Mobile 6 with defaults, no I/M program for Heaviest Component of HD Trucks